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# THE LAW OF CHEMICAL PATENTS

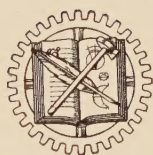
*By*

EDWARD THOMAS

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TO MY WIFE

WHOSE

CONSTANT ENCOURAGEMENT AND TIRELESS ASSISTANCE

MADE THIS BOOK POSSIBLE



## PREFACE

In the ten years since the first edition of this book was published the courts have faced many new problems arising out of the mixture of science and law which deals with chemical inventions. So many and so diverse are these problems that the published decisions dealing with chemical inventions frequently outnumber the published decisions dealing with mechanical inventions, although only one patent out of six or even possibly out of ten, deals with a chemical invention, and these chemical decisions have developed the law upon several lines which were wholly unforeseen. Moreover, some of the decisions have reversed dicta which had seemed likely to grow into established doctrines of law.

As a consequence of this rapid growth of the body of law dealing with chemical inventions it has been found necessary to insert several sections and even new chapters into the framework of the book while preserving the original skeleton.

Many of the decisions which make up this growing body of law are more or less irreconcilable, and this new edition of the book continues to cite and, where possible, quote irreconcilable decisions where no express overruling appears.

In the endeavor to produce a book which is reasonably up to date it has been deemed inadvisable to delay publication to systematize the citation of reports. A table of approximately parallel volumes enables a reader to quickly locate in his series of reports any decision cited from another series.

The present volume includes 89 Fed. (2nd), 18 Fed. Supp., 33 U. S. P. Q., 300 U. S. Reports, 479 O. G. and some later cases, standing for Federal Reporter (Second Ser-



ies), Federal Supplement, U. S. Patents Quarterly, United States (Supreme Court Reports), and Official Gazette of the Patent Office. Other reports cited are, Pet., How., and Wall., the accepted abbreviations for early U. S. Reports, Web. (Webster's Patent Cases), (British) R. P. C. (Reports of Patent Cases). Barring a few scattered others, mostly taken from (J. P. O. S.) Journal of Patent Office Society, the remaining cases are to be found alphabetically arranged in Federal Cases.

Some obvious typographical errors in some of the reports of decisions have been corrected, but generally the writer's former policy of ignoring errors has been adhered to. In two or three cases good law has been founded on serious chemical errors of fact. Such cases have been cited and their errors have passed over without comment.

EDWARD THOMAS.

Woolworth Building,  
New York City  
September, 1937

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## CHAPTER 1

### INTRODUCTORY

Of the patents which become involved in litigation a very large proportion are poorly drawn, either because the attorneys are unfamiliar with the law of patents, or because the attorneys are imperfectly or erroneously informed as to the inventions embodied in the patents or as to the arts to which the inventions themselves belong. The field of science covered by patentable inventions is too vast for any one mind to grasp in comprehensive detail, but it is otherwise with the principles of patent law to be kept in mind when drafting patent specifications and claims. These are relatively simple. Moreover with an adequate background of patent law it is possible to recognize rapidly and surely what fields of industry and of science and scientific literature must be explored for the purpose of selecting the steps necessary for obtaining adequate patent protection for a new invention.

Chemical inventions differ fundamentally from mechanical inventions both in the fields of science to be investigated and in their relationship to patent law. Patents on chemical inventions therefore differ fundamentally from patents on mechanical inventions. Most of the questions arising on patents of either kind can be answered only by learning what decisions the Courts have already rendered upon like questions, always bearing in mind that the commonest inventions, mechanical inventions, are very different from other inventions. Many of these other inventions are, as said by one Court, things which can neither be seen nor felt nor heard, such as fugitive processes, understood only to the extent that they produce new and useful results. Such an invention is essentially a discovery. Some Courts going further have



said that a discovery is something like a new chemical process or new chemical compound that can be proved operative or possible only by experiment or test, while a new machine—the result of invention in the other sense—can usually be proved operative or not with certainty by mere examination of drawings which adequately represent it.

Some problems arising in connection with patents on discoveries which do not arise in connection with patents on mechanical inventions are worthy of note: The description of the invention in the patent may be inadvertently incomplete, as happened in the British patent on a dye, which failed to state that it must be manufactured in an iron vessel,—the usual enameled vessels failed to produce the result the inventor had obtained solely because he used an iron vessel. It may be difficult to determine whether invention lies in the process or in the product or in both, or for other reasons it may be difficult to select the best basis on which to draw adequate patent claims. When questions of anticipation or infringement arise in connection with a patent on a discovery, the patentee is faced with the situation that he cannot apply to chemical patents the doctrine of mechanical equivalents. In an infringement suit on a chemical patent the function of an expert witness is different from that of an expert witness on a mechanical invention. The declarations of the latter are merely aids to the Judge, who can, in case of doubt, examine the drawings and machines for himself and reach a decision based on personal observation. But the expert on chemical patents must be able to carry to the Judge assurance of the existence of things which he can neither see nor feel nor hear. The fugitive process cannot be brought into court and stored away to be examined at leisure.

Perhaps the most difficult problems faced in dealing with chemical inventions and chemical patents are those that arise out of the newly formulated doctrine that broad

patents and broad claims must be founded upon sufficient examples to build a broad foundation for the protection desired.

This doctrine often forces the solicitor to demand that his client conduct expensive research before the final draft of a patent application is prepared.

To the lawyer pursuing an infringer this doctrine often seems to be a builder of loopholes through which the infringer can escape the penalties he morally ought to be required to pay.

To the patentee the doctrine seems to be a scheme for requiring expensive research to endeavor to locate and block those loopholes, because there is only a possibility that the research will prove useful, while there is the stronger probability that it will turn out to be a waste of time and money.

Many decisions construing this new doctrine of patent law have been collected and classified in part in Chapter 3.

This book in treating of chemical patents necessarily draws largely on what the Courts have said regarding patents on other discoveries. The quotations from the cases are necessarily fragmentary, and, for the patent lawyer, are merely intended to point the way to the cases wherein the principles enunciated are discussed. It has been deemed advisable to follow the exact official text of the reported decisions. For this reason the spelling of chemical and other terms is not uniform, and, even in a few instances, the spelling of a person's name varies. For the same reason, no attempt is made to correct errors in scientific data which may incidentally appear.

Conceptions of what the Courts would rule in hypothetical and unformulated cases have usually been found unsatisfactory guides in legal work, and especially unsatisfactory to those unfamiliar with legal terminology. The present book avoids hypothetical reasoning. Its statements of the law consist only of the words of the Courts. It assumes that the reader, whether attorney,

inventor, chemist, or expert in the art, is interested in the validity or scope of a patent or in the status of an invention, and has little interest in the philosophy and the technicalities of the patent law. It is therefore written to meet the point of view of one who is interested first in what a patent shows on its face, what its relation is to the prior art, and what its relation is to possible infringements. For this reason the discussions of the technicalities of procedure, both in obtaining patents and in prosecuting infringers, are placed in the later chapters.

To enable those unfamiliar with the technicalities of patent law, to grasp the principles briefly summarized in the quoted rulings of the Courts, a short introductory section opens each chapter, and the second chapter quotes what various Courts have said as to the nature of a patent. Almost every chapter also begins with a quotation of what some court has said broadly on the questions there involved. As has been well said, the Courts are the final arbiters of the patent law.

This book is necessarily only a selection from the author's digests of patent law. It is impossible in a book of reasonable size to quote all decisions of the Courts on every point. Some points, in fact, are clearly grasped by a reader after perusing two or three quoted rulings. Others, especially those involving questions of equivalency, must be viewed in many phases. In a few instances, where the cases seem to be squarely contradictory, it has been deemed advisable to include several quotable cases bearing on the point in issue. The chapters, therefore, vary greatly in length.

## CHAPTER 2

### OF THE NATURE OF A PATENT

United States patents are authorized by the Constitution, which says, Article 1, Section VIII, "The Congress shall have power . . . to promote the progress of Science and Useful Arts, by securing for limited Times to Authors and Inventors, the exclusive Right to their respective Writings and Discoveries."

Congress has exercised its power by enacting various patent statutes, culminating in the present statute. It is unprofitable to assign any date to this statute, for it is an evolution embodying, mainly, with some modifications, the provisions of earlier statutes.

Pursuant to this statute, United States patents, as issued by the United States Patent Office, consist of three principal parts: (1) A contract form drafted, furnished, and filled out and signed by the Commissioner of Patents; (2) A specification drafted by the inventor or his attorney, disclosing his invention and the "manner and process of making, constructing, compounding and using it"; and (3) One or more "claims," also drawn by the inventor or his attorney subject to the criticism of the Examiner in the Patent Office, and defining the invention which has been described in the specification. Most patents except chemical patents also include (4) drawings. Some chemical patents likewise include drawings.

A patent is thus held by the Courts to be a legal document in the nature of a grant or contract.

#### WHAT THE COURTS HAVE SAID

"The specification and claims of a patent, particularly if the invention be at all complicated, constitute one of

the most difficult legal instruments to draw with accuracy, and in view of the fact that valuable inventions are often placed in the hands of inexperienced persons to prepare such specifications and claims, it is no matter of surprise that the latter frequently fail to describe with requisite certainty the exact invention of the patentee, and err either in claiming that which the patentee had not in fact invented, or in omitting some element which was a valuable or essential part of his actual invention." *Topliff v. Topliff*, 145 U. S. at 171.

"An American patent is a written contract between an inventor and the Government. . . . The consideration given on the part of the inventor to the government is the disclosure of his invention in such plain and full terms that any one skilled in the art to which it appertains may practice it. The consideration on the part of the government given to the patentee for such disclosure is a monopoly for 17 years of the invention to the extent of the claims allowed in the patent." *Fried. Krupp Aktien-Gesellschaft v. Midvale Steel Co.*, 191 Fed. at 594.

"The inventor gets the privilege to exclude the public from its common-law rights for a definite term. The public gets the advantage of a disclosure of something new, which the inventor might otherwise have kept secret." *Waterbury Buckle Co. v. G. E. Prentice Mfg. Co.*, 294 Fed. at 938.

"An inventor pays for his patent by disclosing his invention to the public in such full, clear and exact terms as to enable any person skilled in the art or science to which it pertains to practice or use it." *Guaranty Trust Co. v. Union Solvents Corp.*, 54 Fed. 2nd, 403.

"The object of the patent law is to protect the inventor, not in some paper ideal, but in his actual contribution to the useful arts." *Los Angeles Lime Co. v. Nye*, 270 Fed. at 160, quoting *Asbestos Shingle, Slate and S. Co. v. Rock Fibre Mfg. Co.*, 217 Fed. 66.



“An inventor must do more than give cues for future experiments. . . . Unless he is dealing with elements whose action and reaction is known and certain, he is bound to disclose how the combination will operate. A patent is the reward of a tested contribution to the art, not of a pregnant surmise or a promising hypothesis.” *H. Ward Leonard, Inc. v. Maxwell Motor Sales Corp.*, 252 Fed. at 590.

“What any patentee has invented is theoretically what he discloses, and the disclosure is the specification. A claim is a definition of that which has been described in the specification. . . . Theoretically the . . . ‘man skilled in the art’ knows how to do what the inventor did when he has perused the disclosure. Whether one infringes a patent primarily depends, to be sure, upon consideration of the claims; but no man would know how to practice the invention by reading the claims. . . . A claim not supported by the specification is a bad claim. . . . A disclosure which tells how to do a thing not claimed is a misfortune for the patentee.” *Westinghouse E. and Mfg. Co. v. Metropolitan E. Mfg. Co.*, 290 Fed. at 664.

“The summary of the patentee’s claim at the close of the specification . . . implies that all the rest is old, or, if not old, that the applicant does not claim it so far as the patent is concerned.” *The Cornplanter Patent (Brown v. Guild)*, 23 Wall. at 224.

“A claim is both a definition and an assertion. The definition must be justified by the disclosure; the assertion stands alone.” *General Electric Co. v. Nitro Tungsten Lamp Co.*, 266 Fed. at 1000.

“The claim is a statutory requirement, prescribed for the very purpose of making the patentee define precisely what his invention is.” *White v. Dunbar*, 119 U. S. at 52.

“All patentable inventions are defined by claims, but described, explained, and disclosed by specification.”

Curtiss Aeroplane and Motor Corp. v. Janin, 278 Fed. at 456.

“If Drummond had actually employed Brown and paid him to originate and invent certain chemical compounds, any patent monopoly based on such invention . . . could only have been established by the filing of a patent application by Brown with an assignment to Drummond.”  
Kuhne Identification Systems, Inc. v. United States, 28 U. S. P. Q. 155.

## CHAPTER 3

### OF THE DISCLOSURE IN A CHEMICAL PATENT

Most inventors and many attorneys mistakenly assume that the specification of a patent is of minor importance. In reality it is the foundation of the patent. For what any patentee has invented is theoretically what he discloses, and the disclosure is the specification. Whether one infringes a patent primarily depends upon consideration of the claims, but no man would know how to practice the invention by reading the claims. Moreover one of the most fruitful causes of patent litigation has been the weakness of patents resulting from failure to file sufficiently detailed original specifications containing adequately explained examples of how the invention has been embodied and practiced.

Within the last ten years a rule of law has grown up that a chemical patent cannot validly cover a broad field unless sufficient examples of practicing the invention appear in the specification to inform a chemist of what probably happens throughout the whole field attempted to be covered.

Broad claims, therefore, can only be founded on a broad showing in the examples. The nature of permissible broad claims and the kind of specification needed to support them is set forth in the latter part of Chapters 11 and 12.

Often it happens, moreover, that, before the law, there is no invention in what the inventor thinks is the vital novelty of his discovery. That feature may be old, so that legally the invention lies in some detail, seemingly trivial to his eyes. Unless that detail is fully disclosed the inventor may get a substantially worthless patent, if he gets any patent at all.

Many stumbling-blocks in the pathways of chemical inventors can be avoided by following the example of patentees whose patents have been sustained by the Courts, avoiding all statement of theory, and describing in great detail the actual procedures followed in tests or operations.

#### WHAT THE COURTS HAVE SAID

##### **I. In General**

“This question of disclosure is, of course, one of fact.” *Dreyfus v. Lilienfeld*, 9 U. S. P. Q. 503.

“The law does not require that a discoverer or inventor, in order to get a patent for a process, must have succeeded in bringing his art to the highest degree of perfection. It is enough if he describes his method with sufficient clearness and precision to enable those skilled in the matter to understand what the process is, and if he points out some practicable way of putting it into operation.” *Telephone Cases*, 126 U. S. at 536.

“The thing to be considered is: Did these problems confront him? Did he show how to solve them? And is his solution a useful one?” *Dayton Engineering L. Co. v. Sidney B. Bowman A. Co.*, 229 Fed. at 724.

“The statement of a process upon the part of a patentee . . . must point out the new steps so definitely, that one . . . will have a clear chart before his eye.” *Ceraline Mfg. Co. v. Bates*, 101 Fed. 280.

“The examiner has regarded the words ‘predetermined length’ and ‘regulated flow’ appearing in claim 11 to render such claim indefinite. We think in view of the description and specification that the claim is not open to this objection.” *Ex parte Conklin*, 11 U. S. P. Q. 152.

“The Examiner first raises objection and bases the rejection of the claims on the ground that the reference to oils of high boiling point range and oils of low boiling point range and corresponding gravities is not sufficient

identification of particular grades of oil. The Examiner points out that mineral oils such as contemplated in this process are never one single definite hydrocarbon but consist of a group or multiplicity of such hydrocarbons of varying gravities and boiling points. We believe, however, that the expressions as used in the claims are definite and within the usual terms of expression in this art in that reference to oils of lower and higher boiling points and gravities is accepted to mean a group of particular hydrocarbons having an average of boiling points and gravities which would be designated broadly as high or low." *Ex Parte Egloff*, 15 U. S. P. Q. 152.

"The patent, being for a process, should contain a distinct statement of each step, or, at the least, an unambiguous inference of any step that is not distinctly stated." *General Subconstruction Co. v. Netcher*, 174 Fed. at 244.

"When an inventor gives examples or instances of a generalization, he necessarily means that they contain all the determinants of which the generalization is composed. If he is wrong, either it is because the generalization itself is wrong, or because he has not properly understood the examples. In either event the disclosure contradicts itself and furnishes no guidance to the art. The examples are certainly part of the evidence on which the generalization is founded. . . . They confute it. If it is right it can only be by a chance, it cannot be founded upon genuine discovery, and therefore will not support a patent." *Grasselli Chem. Co. v. National Aniline and Chem. Co.*, 26 Fed. 2nd, 307, 308.

"The patent in suit disclosed no practical method by which sheets could be made successfully rolled in a continuous mill. . . . The specification claimed sundry advantages would result from the use of a continuous mill, but the patentee disclosed no means by which these results could be secured. . . . This patent has left no impress . . . invalid." *Donner v. American Sheet and Tin Plate Co.*, 165 Fed. at 203, 206.



“Dies of a particular taper and an alloy of a particular character are essential. . . . The patent is silent upon these points. . . . The mere instruction to use an alloy would still be insufficient, for the complainant has testified that the ordinary alloys, copper and silver, are unsuitable for the ‘process.’ ” *Ballou v. Potter*, 110 Fed. at 971.

“One who gets a patent must pay the price. In return for his monopoly for a limited time, he must tell the public how it may enjoy the use of his invention, after his exclusive rights in it have come to an end. He does not do this if he merely describes a new article, without telling how it can be made.” *One-piece Bifocal Lens Co. v. Bisight Co.* 246 Fed. at 456, 457.

“Product claims are not sustainable unless the specification discloses at least one practicable way in which to make the product.” *Hemming Mfg. Co. v. Cutler-Hammer Mfg. Co.*, 243 Fed. at 600.

“In anomalous cases, like the present, when a new product has been discovered, and the process of compounding or obtaining it is disclosed, the patentee, by stating his discovery and revealing his process, has done all that he is required to do or can do. The careful separation of new from old, the limitation of claims to particular parts or combinations, can not be required as a substantial part of the specification. If a specification sets forth a discovery, a new composition of matter, and the process for compounding it, that should be taken as the extent of his claim and the measure of his franchise.” *Goodyear v. Central R. Co. of N. J.*, 1 Fish. 626.

“The patent cannot be reconstructed to meet new conditions and new facts subsequently discovered. . . . If the machine or process so described and claimed will not work he cannot collect tribute from a subsequent machine or process that will work.” *Siemund v. Enderlin*, 212 Fed. 412.



“Instead of describing the process he mentions a quality of the product, and asks the court to infer the process from the quality. Such a vague and inverted method of description is not a compliance with the statute.” *Western Electric Mfg. Co. v. Ansonia Brass and Copper Co.*, 114 U. S. at 452.

“ ‘The application shall contain a written description.’ . . . ‘The object of this is to apprise the public of what the patentee claims as his own, the courts of what they are called upon to construe, and competing manufacturers and dealers of exactly what they are bound to avoid.’ . . . If an invention has gone into general use . . . defects in description will often be overlooked. . . . This liberal rule should not apply, and never has been applied, to a patent which has not had a pronounced success.” *Karl Kiefer Mach. Co. v. Unionwerke, A. G.*, 218 Fed. at 856.

“What plaintiff really relies on is the vulcanizing . . . due to the heat generated by the tire while in use. . . . Plaintiff’s patent specifications do not disclose any process whereby a solution of rubber or quick vulcanizing cement can be made, and none is known to the art, whereby vulcanizing can be obtained by such heat as is generated by a tire in use. As a process patent it is void for want of such disclosure.” *Krichbaum v. McDanel*, 282 Fed. at 458.

“The District Court held that the patent was invalid as to each claim, and we think the ruling is correct. No doubt the use of domestic talc and chalk in the proportions of ninety-nine pounds of domestic talc to nine or sixteen pounds of chalk will produce appellant’s product, if the kaolin present does not exceed a certain amount. The controlling ratio is not between talc and chalk, but between kaolin and chalk, and concerning that ratio the patent discloses no information.” *Helfrich v. Solo*, 13 U. S. P. Q. 366.

“Appellant contends that the brine-cooling system disclosed by Wright ‘is practically inoperative for liquefying normally gaseous hydrocarbons such as propane and butane.’ But appellant discloses no cooling method whatever. In his brief he states that practical application of his process ‘requires that the propane and butane be liquefied by very efficient refrigeration before being introduced to the injection well.’ We must assume, therefore, that cooling methods are so well known in the art as to require no description in the specification. It follows that the best cooling system known to the art was and is available to those practicing the Wright invention.” *Doherty v. Robertson*, 17 U. S. P. Q. 354.

“A cellular fabric comprising a body of adherent bubbles, each having a thin rigid envelop of set hydraulic cement. . . . We agree with the Patent Office tribunals that the appellant here has not made a disclosure of any such product. The product which he does disclose in his specification will consist of a cementitious mass throughout which bubbles are mixed, and which will therefore be a porous cement mass. If, as the Patent Office tribunals state, this is all the appellant discloses, his application for patent must be rejected on reference to Sanford and Aylsworth, each of whom discloses such a structure. If, on the other hand, appellant’s product differs from that of Aylsworth and Sanford, and is such a product as is shown by Hinton, appellant’s disclosure is not sufficient to describe any such product. Appellant’s product is a ‘material . . . of such durability that when properly handled a great number of air bubbles are left in the material.’ This differs greatly from a material which is all bubbles, as described in the claim.” In *re Bayer*, 17 U. S. P. Q. 247, 248.

“It will be thus seen that the disclosure of the patent was for a single specified method, to weld a single specified article, and to do such work at a specified point. The case, therefore, being one where no preferable or illus-

trative practice is shown, but where the disclosure is specific and aptly describes its single, unitary invention, the patentee is awarded all he disclosed and claimed if given a monopoly of such particular method." *Alumino-Thermic Corporation v. Goldschmidt Thermit Co.*, 25 Fed. 2nd, 208.

"It does not appear that the phrase 'commercially useful life,' needs further definition." *General Electric Co. v. Anraku*, 10 Fed. Supp. 942.

"De Brey's two patents taken together call for rectification at any temperature and at any pressure and hence rectification generally. It becomes clear . . . that De Brey attempted to cover the whole field of rectification of raw natural gasoline. As a means of doing so he employed two patents, rather than one. The division between them is purely arbitrary. Consequently, any selection and correlation of temperature and pressure conditions found in the patent in suit is merely apparent, not real. His claims are wanting in invention." *Carbide & Carbon Chemicals Co. v. Phillips Petroleum Co.*, 28 Fed. 2nd, 219.

"'Before any inventor or discoverer shall receive a patent for his invention or discovery, he shall . . . file in the Patent Office a written description . . . of the manner and process of making . . . and using it, in such full, clear . . . and exact terms as to enable any person skilled in the art . . . to which it appertains . . . to make . . . and use the same.' Has this basic statutory condition precedent to the grant of a patent been complied with by the present applicant? The evidence satisfies us that it has not . . . we hold the patent invalid." *Rohm v. Martin Dennis Co.*, 263 Fed. at 389.

"The disclosure in his specification . . . of sodium cyanide, calcium cyanide, or a mixture of these compounds, was a disclosure of a cyanide containing alkali metal compounds and also a disclosure of a material free from alkali metal compounds." *Metzger v. Cooper*, 4 U. S. P. Q. 384.

“Applicant is required to further identify the dyes referred to in the specification by their Color Index Numbers or their chemical constitution.” *Smith Ser. No. —.*

“The efficiency of the electric current to break up and separate the chemical compounds of a fused mass of ore by maintaining the current through it is a faculty of the current itself, inherent and indivisible. . . . It was not necessary that Cowles should have known how the current acted in effecting the reduction, or what peculiar power or energy of the current effected the result. . . . An inventor is entitled to claim for all the capabilities of his process, however prominent he may have made any single idea embodied therein.” *Cowles Electric S. and R. Co. v. Lowery*, 79 Fed. at 351, 352.

“The first claim . . . is a bald attempt to patent . . . the result of a mechanical operation which the operator must learn how to perform for himself without aid from the specification. . . . No mechanism for creasing paper ‘by means of successive blows or pressures’ is suggested in the specification.” *Chicopee Folding Box Co. v. Rogers*, 32 Fed. at 696.

“The defendants also make the point that the character or kind of sheets of celluloid is not sufficiently disclosed by the patent. As there was but one kind of celluloid sheets which could, at the date of the patent, be used for the purpose, and the mechanic had no need of definite instruction . . . the objection seems to be theoretical rather than real.” *Celluloid Mfg. Co. v. American Zylonite Co.*, 30 Fed. at 440.

“It is an elemental proposition as to patents that they shall be so clear that by ordinary means they can be worked out by a person skilled in the art. . . . If the patent is for a process to be effected without any known means of accomplishing the result, but requiring inventive faculty, whereby rolls to accomplish the purposes, and their modes of operation, were to be determined by new inventions or discoveries, then the patent does not

furnish to any one, as then skilled in the art, means whereby the beneficial end could be accomplished. No one on the then existing state of the art could, by the use of any rolls known, or by any modes of operating the same, have effected the designed end. Consequently, to uphold this patent for a process which would have been ineffective without some inventions thereafter had, would be to block the path to all future progress in the art of milling. . . . I dismiss the bill, the patent being void." *Downton v. Yaeger*, 1 Fed. at 202, 203.

"Plaintiff uses, and defendant uses, and this expert, when he finally succeeded in making good sponges, used, a peculiar and special ingredient ('paragol,' a corn oil substitute) in the compound . . . which ingredient, as entering into this compound, was early discovered by and has always been used by plaintiff, but was kept secret until defendant learned about it. . . . No one, seemingly, has ever made a satisfactory sponge, without using 'paragol' or its equivalent . . . and it does not appear that compounds containing this ingredient . . . were upon the market, or, indeed, known to anyone. . . . The patentees' real discovery was not in what they disclosed in their specification, but in what they concealed. . . . Invalidity necessarily follows." *Featheredge Rubber Co. v. Miller Rubber Co.*, 259 Fed. at 569, 570.

"The context in the specification, in view of the examples given and the general statement that more than one compound may be employed, indicates that the word 'any' was used in the sense of any one or more than one. . . . The specification teaches the worker that any compound previously named in the specification may be reacted with phosphorous pentasulfide, or mixtures of the compounds may be reacted." *Christmann v. Derby*, 32 U. S. P. Q. 329.

"The Examiner held appellant failed to state anywhere in his original specification that he added sufficient lime to autogenously create the major portion of the heat re-



quired, that he supplied some heat from external sources. . . . The Examiners in Chief . . . were unable to read the terms 'a large proportion' . . . as meaning an amount necessary to supply the major portion of the heat. . . . Appellant . . . can not, in consequence, include the specific matter in his claims." *Ex parte Statham*, 339 O. G. 220.

"But the mere omission of the patentee to mention the working of the filament before sealing is not equivalent to an express direction that it shall not be worked. . . . We could not for this reason pronounce the patent invalid: for with ordinary intelligence his second inference would be that Malignani intended to proceed in the old way in getting his partial vacuum, and that he did not intend to introduce a novelty into this step in his process, but only in the final step. . . . We are dealing with a document granted to the person who actually advanced the art, and not with a patent that is brought forth to obstruct the advance of a practical art. Under such circumstances the courts are disinclined to so interpret the terms of a patent as to reach a conclusion that is opposed to well-established fact, and to hold that the process described is inoperative, though the process which manifestly the inventor intended to patent is operative and valuable." *Malignani v. Jasper Marsh Consol. E. L. Co.*, 180 Fed. at 448, 453.

"Conceding that present day competitive conditions require a life of 1,000 hours, that Claude contemplated the use of say 2 mm. pressure, that at this pressure the life of the tube would be much less than 1,000 hours, and that the present great commercial utility of neon tubes is due almost exclusively to the later discovery by someone of the advantages of using pressures as high as 15 mm. . . . The argument still falls far short of establishing invalidity." *Sun Ray Gas Corp. v. The Bellows Claude Neon Co.*, 9 U. S. P. Q. 437.



“The specifications neither make plain that glycerin shall be altogether eliminated, or declare what is its tolerable upper limit if it need not be. Once more the art was not adequately instructed. That does not invalidate the patent, if the claims be construed as neutral as regards glycerin, but it deprives the invention of any value, because glycerin will ruin the grease; and moreover, if so construed, the claims were anticipated.” *Texas Co. v. Sinclair Refining Co.*, 32 U. S. P. Q. 470.

“The defendants claim that the plaintiff’s process will not produce a sagless filament. . . . Beyond any doubt the Pacz 218 wire makes a commercially sagless filament.” *General Electric Co. v. Wabash Appliance Co.*, 32 U. S. P. Q. 187.

“Defendant further contends that the patent is invalid because it does not so describe the lamp as to enable a person skilled in the art at the date of the patent, to make a practically useful structure. . . . The witness Howell . . . made as he testifies . . . according to the directions of the patent, and using only processes known to the art before its date, incandescent lamps. . . . Defendant criticizes this evidence, because the witness subjected the filaments made by him to the action of an electric current during the process of exhaustion. . . . The requirements of the patent would not be complied with . . . unless he did in fact so heat the filaments. Whether he heated to carbonize, or to secure a nearly perfect vacuum, the result would be the same,—an operative lamp produced by following the directions of the patent with the ordinary skill of the art, and that is all the patentee was required to show.” *Edison Electric L. Co. v. United States Electric L. Co.*, 52 Fed. at 310, 311.

“The specification of the patent is not addressed to lawyers, or even to the public generally, but to the manufacturers of steel; and any description which is sufficient to appraise them in the language of the art of the definite feature of the invention, and to serve as a warning to

others of what the patent claims, as a monopoly, is sufficiently definite to sustain the patent. He may assume that what was already known in the art of manufacturing steel was known to them, and . . . 'he may begin at the point where his invention begins, and describe what he has made that is new, and what it replaces of the old. That which is common and well known is as if it were written out in the patent and delineated in the drawings.'" *Carnegie Steel Co. v. Cambria Iron Co.*, 185 U. S. at 437.

"The attack upon the specifications is . . . : That it is deceptive, in saying that the motor will run upon all frequencies of alternating current: that it is too vague . . . leaving the public to experiment. . . . It is the defendant's assertion that no practicable motor has yet been devised to run upon such frequencies and also upon direct current. . . . There is no evidence that it was deliberately introduced to deceive the public, and, so far as appears, it was an honest mistake. . . . So far as appears, the motor will work successfully if the elements are combined as described, though in size and proportion they stand anywhere within the limits which the art would recognize as included in their mention by name. . . . The exact angle of the brushes could not be predetermined, because it varies. . . . It is as if a chemist were directed to add enough of an element to secure precipitation. Such a recipe would be an absolutely accurate guide to the result though the quantity varied with temperature or atmospheric humidity. What men need is a path to the goal; they will not be curious of the country it traverses.'" *Burke Electric Co. v. Independent Pneumatic Tool Co.*, 232 Fed. at 147, 148.

"A doubtful point in the description, when considered apart from the claims, can by reference to the latter, when in themselves unambiguous, be rendered so clear as to satisfy the other requirement of the statute that the inventor shall fully and clearly set forth his invention in

the description.” *Electric Smelting and A. Co. v. Carborundum Co.*, 102 Fed. at 629.

“Thin means thin and nothing else, but no difficulty is perceived why a skilled worker may not readily determine for himself the limits of thinness or of thickness beyond which in other direction the process would not be practically operative.” *Fulton Co. v. Bishop and Babcock Co.*, 17 Fed. 2nd, 1003.

“The claims being a part of the description is true enough, provided the claims are in the case when it was filed.” *Oswald*, 83 Fed. 2nd, 829.

“No one should assume that the objective—a ‘permanently keeping cheese’—meant a cheese never to be used, but made . . . as a prospective ‘antique’. The sense is that . . . permanent for a period far beyond that possible in the native state of the product, but, always in the light of the probabilities in the course of commerce, in demand and consumption.” *Kraft Cheese Co. v. Pabst Corp.*, 17 Fed. 2nd, 789.

“The specification does not conform to any scientific or engineering principles of which we have been able to obtain any knowledge. Should we reverse the experts and grant the patent sought it would be a leap in the dark. . . . There is nothing shown us from the realm of science by which to measure it. . . . Neither the Patent Office tribunals nor the courts may properly grant patents upon a mere possibility that a device might do the things claimed for it, and be useful.” *Perrigo*, 9 U. S. P. Q. 153, 154.

“We cannot agree with appellant that the language ‘The outer coating layer of the chewing gum may be a simple sugar layer, formed of a suitable syrup, and it may have incorporated other constituents such as flavoring, etc.’ should be construed as an outer coating excluding the medicament. It is our view that by this language appellant intended merely to point out how one might make the sugar coating which, as recognized throughout

the specification, was to be combined with part or all of the medicament." *Sulzberger*, 420 O. G. 295.

"The plaintiff attempts to discredit the defendant's proof that obedience to the disclosure will not produce a laxative gum, by appealing to the well-known reluctance of courts to place much weight upon *ex parte* experiments. . . . The reasons which justify that reluctance do not extend to what is done *ante litem motam*, when there is no motive to fabricate. Gordon made two efforts to make a phenolphthalein chewing gum in 1917, long before the *Sulzberger* patent was being exploited, and when, so far as appears, he had no reason to fear it. He failed in each case, and succeeded only when he adopted the present commercial practice of both the parties here. . . . We agree that a patentee is entitled to expect those who follow his teaching honestly to try to reach his result. Certainly they may not blind their eyes to his obvious omissions or errors. Nevertheless the law demands of them little imagination, and a patentee may not ground his monopoly upon mere cues for promising experiment." *Health Products Corporation vs. Ex-Lax Mfg. Co., Inc.*, 22 Fed. 2nd, 287, 288.

"No single specimen of a method of combining various materials to produce the produce is indicated in the specification. . . . The single new thing was the idea that cellulose ether might be substituted for nitrocellulose. . . . Patent No. 1,188,376 . . . is for the specific ether of cellulose (and their process of manufacture). . . . If . . . the general suggestion . . . is sufficient to teach the art how to use that material in a plastic composition—there is nothing patentable over Patent No. 1,188,376. If some description of the method of forming the plastic composition is necessary, that description is not found in the specification as filed. Consequently there is no foundation for a valid patent." *In re Lilienfeld*, 333 O. G. 805.

"No mathematical formula based upon the physical properties of an exhibit of a given thickness and texture



is furnished, but the specification teaches . . . that the material should be made by the pulp-sucking process, and that it should be rigid enough not to deform . . . and that it shall be of a certain shape and design. There is no suggestion in the Miller [prior] patent of a rigid structure . . . it cannot affect complainant's rights." *Holed-Tite Packing, Inc. v. Mapes*, 11 Fed. 2nd at 788.

"It is quite clear that what the patentee had in mind was disclosed by the compositions provided for in the prior art patents and the advantage of such compositions for nailing or holding purposes was clearly disclosed. The only disclosure that the patent in suit contains is the composition of cement and rock asbestos. . . . There is no guide to the amount of fiber alone that may be used. . . . If there be a difference in the proportions of constituents, that alone does not entitle the originators to the monopoly of the patent." *Nailerete Corp. v. Paul Mende Inc.*, 11 Fed. 2nd at 680.

"If Mr. Mitchell's invention . . . really involves the use of diluted acid . . . it was his duty to describe the solution or state the practical rule which accomplishes the desired result. . . . Merely to describe the use of heated acid . . . was to add nothing to the stock of common knowledge. . . . His patents are void." *Chemical Rubber Co. v. Raymond Rubber Co.*, 71 Fed. at 182, 183.

"If the patent discloses invention, it is in the kind of paper selected and the quantity of wax used to saturate it. The patentee says: 'I prefer a manila or . . . so that it is about half wax.' . . . He is the first to suggest this proportion. If he had planted himself in his application for a patent upon this definite ratio, or a trifling variation therefrom, and stood on it, the patent might have been valid. . . . But . . . the patentee . . . said: ' . . . the percentage of wax . . . and other details may be changed.' . . . As we view it, 'the essential of the invention' was the definite ratio between the preferred paper and the wax. The patentee thus abandoned . . .

the ratio. . . . The patent . . . is invalid.” *Reuckheimer Bros. and Eckstein v. D. L. Clark Co.*, 280 Fed. at 715.

“As the specification and claim of this patent are repugnant to each other, we must either find the whole invention in the specifications or in the claim, and cannot take part of the specifications to help out the claim, and reject the rest.” *Smith v. Murray*, 27 Fed. at 70.

“The end to be accomplished is not the subject of a patent. The invention consists in the new and useful means of obtaining it.” *Carver v. Hyde*, 16 Pet. 519.

“Even the broadest or most loosely drawn method or combination claim, must be fortified by a disclosure of how the method is to be practiced, or the kind and nature of the elements combined.” *Electro-Dynamic Co. v. United States Light and H. Corp.*, 278 Fed. at 84.

“Claim 3 is for the exact quantity of zinc dust ascertained to be sufficient to precipitate the said metals. . . . Ascertained how? No proportions are given . . . not a word is said in the patent from which one desiring to use the process described therein can determine the . . . ‘exact quantity.’ . . . We are unable to see any invention in anything disclosed.” *De Lamar v. De Lamar Min. Co.*, 117 Fed. at 247, 248.

“We do not question but that appellant has made an unobvious discovery if the conditions are as understood by him, but we do not feel justified in accepting the attorney’s unsupported statement . . . that the type of oil referred to in the reference may not contain acid up to the number specified in the claim and we consider, therefore, that the record does not justify the allowance of this claim.” *Beardsley*, 28 U. S. P. Q. 242.

“While the claims now in the case appear in themselves, to be of fairly definite terms although quite broad, we are confronted with a specification which is suggestive of such a confusing number of compounds, mixtures and alternative possibilities, that we are unable to identify the features of the claims in the specification. . . . We



believe the rejection to be warranted." Fischer, 4 U. S. P. Q. 309.

"Language stating in substance that the proportion of acid used in the condensation products may vary from slight or catalytic proportions indicates the intention to use catalytic proportions of these acids and that this feature of the claims can be said to be properly disclosed." Ellis, 26 U. S. P. Q. 279.

"It now appears that the accusation under this defense is that the specification did not fully disclose the nature of the ink, the proof showing that various inks which contain a solvent of pyroxyline cannot be successfully used. . . . The specification is addressed to those having a knowledge of the art. To caution them against compounding an ink with a solvent of such high volatility as to make it useless in practice, would seem to be unnecessary." Celluloid Mfg. Co. v. Russell, 37 Fed. at 679.

"As Bolton was addressing weavers, and weavers know that the closeness of the weave affects the stiffness of the fabric, was this not enough, and could he have said anything more which would have helped? There was no way to prescribe what closeness was necessary. . . . The art found it enough in any case. . . . If it was not Bolton. . . . Granting that more was necessary than Bolton actually performed, and that he builded better than he knew, it was his disclosure, and his alone, that proved enough in the hands of ordinary persons to practice the invention." Van Heusen Products, Inc., v. Earl and Wilson, 300 Fed. at 928.

"His specification was addressed to chemists, not lawyers, and he was justified in assuming that a chemist would understand when he said in his original application that he used nitrobenzole or other solvent, that he meant other similar or equivalent solvent, one which would accomplish the same result in the same manner." Goodwin Film and Camera Co. v. Eastman Kodak Co., 213 Fed. at 237.

“He says the oil treated by Kennedy was neither desulphurized nor deodorized. . . . Kennedy himself gave evidence . . . the result of these experiments was . . . ‘there is no use to try it without steam.’ This . . . is a step in the process not hinted at in the specifications in his patent, or in either of his claims. His failure to make this a part of his process in his claims is fatal to it.” *Kennedy v. Solar Refining Co.*, 69 Fed. at 724.

“Inasmuch as the discovery of a new substance by means of chemical combination is empirical, and results from experiment, the law requires that the description in a patent for such a discovery should be specially clear and distinct.” *Panzl v. Battle Island Paper Co.*, 138 Fed. at 53, quoting *Tyler v. Boston*, 7 Wall. 327.

“The patent attempts to mislead the reader by stating . . . whereas it makes little difference how they are mixed. The patent refers to heat . . . in spite of the fact that no chemical reaction occurs. . . . The chemical reaction . . . causing a refrigeration. . . . The patent reads: ‘I then mix . . .’ If this was followed it would prove dangerous. . . . The patent is invalid.” *Vezekenyi v. Comolite Corp.*, 26 U. S. P. Q. 184.

“Nowhere in the patent is it pointed out how this result may be achieved, and nothing was disclosed whereby the public generally or those skilled in the art might procure or produce ‘cocoanut oil from which the free fatty acids have been removed.’ For want of such disclosure alone . . . we conclude claim 7 is void.” *Hebe Co. v. Enz*, 283 Fed. at 978.

“The facts of this particular case seem to us a perfect illustration of the unfairness of reading these patents by the light of a cutler’s (rather underestimated) workaday knowledge. If the patents were to be judged by what a cutler could make out of them, and it were true that the best cutler did not know enough to properly harden the stainless steel of the patents after reading the disclosure, such ignorant workman could never infringe. But the de-

fendant is not a cutler, but an incorporated steel maker, equipped with the professional skill of metallurgists: and it is plain enough that the patents were full of instruction for men of the grade of the infringer." *American Stainless Steel Co. v. Ludlum Steel Co.*, 290 Fed. at 108.

"There is no disclosure in the patent of what material the insulation should be, nor how to keep it tight, nor how to prevent the destruction of the plug by the heat. . . . If the porcelain was soaked in oil, baked, and then as was done with soapstone, the porcelain might have been made to work, but nothing of this nature is mentioned in the patent." *A. R. Mosler and Co. v. Lurie*, 200 Fed. at 436, 437.

"It may be that the changes in the mode of using the Hall process . . . from that recommended . . . in his patent, are great improvements, but that does not in the slightest degree affect the validity of the patent if it appear that at the time when application was made a new and useful result could be accomplished with the process by the mode which Hall suggested. . . . It does not at all reflect on the utility of his processes that he should have been a year or more experimenting to determine just exactly what apparatus to adopt." *Pittsburgh Reduction Co. v. Cowles Electric S. and A. Co.*, 55 Fed. at 316, 317.

"The lack of fulness, clarity, and exactitude in the disclosure is sought to be demonstrated. . . . Clarity of description is a question of fact, and the solution of a fact inquiry always depends upon the surrounding circumstances as adduced in evidence. . . . It is advisable to remember first how very easy it is not to do a thing, and how small is the step from not wanting to do a thing to declaring that it cannot be done. . . . It is by no means enough to condemn a patent disclosure that even a skilled man might find it necessary to make several tests or trials of before arriving at success. . . . 'The specification of a patent is not addressed to people who are ignorant

about the subject matter. It is addressed to people who know something about it.' " *A. B. Dick Co. v. Barnett*, 288 Fed. at 800, 801.

"Plaintiff admits that it has a formula for mixing asphalt which it finds most satisfactory and which it refused to divulge. But there is no concealment of the names of materials nor of formula strength but merely of the blending. Nor does it appear that defendant could not, by a reasonable amount of experimentation, obtain the identical and equally efficacious blending. Such is scarcely more than what a painter skilled in his work would do in the way of mixing his paints in order to produce the best results on a given job." *Vortex Mfg. Co. v. Ply Rite Contracting Co.*, 2 U. S. P. Q. 159.

"The patent does disclose the addition of the acid to neutralize the alkali and to throw the mass on the acid side, also, of course, the final heating of the material to bring it to a hard gel. So that in all there is a sufficient disclosure in the patent of a process which would convert the sol to a gel with the water dispersion." *Catalin Corp. of America v. Catalazuli Mfg. Co.*, 26 U. S. P. Q. 228.

"He admits that during this interval he expended thousands of dollars and ruined thousands of plates in endeavoring to make the sink. . . . This confession not only demonstrates that the patentee has failed to disclose the secret of his process, and specify his invention in such a way that others of the same trade would be able to do the thing for which the patent was granted, without any new invention or addition of their own,—has merely 'set them a problem to solve' . . . but also that the process was a mystery to himself. . . . The result of his experiments has justified his faith in the adequacy of 'the swaging operation' . . . but the necessity for the experiments proves that the machinery of his success . . . was obviously a hard-born afterthought. . . . The claim for the process is untenable." *Kilbourne v. W. Bingham Co.*, 50 Fed. at 700.

“The instructions were that the . . . glaze was to be composed of any coloring matter that can be made to remain mechanically suspended a short time in water. . . . It is insisted by the complainant that he was necessarily instructed by the language to grind coarsely. . . . No testimony was produced by the defendant from any skilled enameler that he would not have been able to understand the patent and be correctly instructed by it. . . . The defense has not been established.” *Lalance and Grosjean Mfg. Co. v. Haberman Mfg. Co.*, 55 Fed. at 296, 297.

“Defendant contends further that the specifications and claims do not make a sufficient disclosure. . . . This objection is based upon the variation of the treatment required in dealing with and combining the different materials used in the process described in the patent; for example, strips of paper treated to retard permeation by moisture, applied to the plastic material of plaster, cement, or compositions of the same, interposed between such sheets, and the absorbing or drying period of each, which must be timed to certain stages of the process. . . . The Supreme Court, in *Webster Loom Co. v. Higgins*, 105 U. S. 568, . . . said:

‘This evidence, of which the record in the case furnishes an abundance, being resorted to, we have no difficulty in comprehending the patent, or the nature of the invention therein described.’

We have pursued that method in this case . . . while we have found the process technical, and the elements closely compacted and delicately related . . . we draw the obvious conclusion that the expert . . . would have no greater difficulty in making, constructing, and using the process and the mechanism devised for carrying it into operation.” *Schumacher v. Buttonlath Mfg. Co.*, 292 Fed. at 534, 535.

“We are not able to think that the difference between a surface permeation and saturation and a saturation



which goes to the center of the sheet is in itself anything more than a difference in degree, depending upon the existing physical conditions, and the advantage of getting as much saturation as possible we think must have been obvious to everyone. It may be conceded that Wright attained a degree of saturation, and thereby obtained in the final product a degree of homogeneity never before attained, thus making the product more useful than anything earlier; but if, in so doing, he employed anything more than the natural efforts of a skilled workman (and in this art the extraordinary knowledge and skill of one short period was the commonplace of the next), it consisted in finding a peculiar material unusually capable of complete saturation by this liquid, and appellant's brief indicates a chief reliance upon this theory of real inventive merit; but the specification leaves us uninformed as to what such material is or how to find it. Patentability, therefore, cannot rest upon any presumption that the material constitutes the discovery." *Continental Fibre Co. v. Formica Insulation Co.*, 287 Fed. 456. But see *Respro, Inc. v. Worcester Backing Co.*, 26 U. S. P. Q. 256.

"Crossley's invention . . . is alleged to consist of . . . a critical drying temperature. . . . But the patent in suit nowhere states a critical temperature. It merely mentions . . . preferably a temperature not exceeding 250° F." *Plant Products Co. v. Phillips Chemical Co.*, 31 U. S. P. Q. 419.

"In carrying out my invention I employ the ingredients in the proportion of one molecule of a phenolic body to one molecule of a carbohydrate such as dextrose, and in a typical case I dissolve 100 grams of phenol and 100 grams of dextrose in a suitable solvent . . . together with . . . Appellant urges that . . . the proportion of one molecule of a phenolic body to one molecule of dextrose is inconsistent with the further statement of the use of 100 grams of each . . . renders the description so ambiguous as not to comply with section 4888 R.S. We



do not agree. . . . An excess of phenol . . . is permissible." *Meigs v. McIntosh*, 4 U. S. P. Q. 332.

"His discovery is: (1) In the susceptibility of cheddar cheese to retain its structure . . . under the action of heat of as high a temperature as 175° or even more . . . I do not interpret the statement of his discovery as . . . Without even resorting to the so-called doctrine of equivalency, the patents disclose a claim of discovery of a range of degrees of temperature, or of time, within which the step or steps may be taken." *Kraft Cheese Co. v. Pabst Corp.*, 17 Fed. 2nd, 790.

"A superficial glance at the claims makes it manifest that the inventor had no precise and exact idea of the method he was claiming. . . . Notwithstanding the disclosure of the patent, the practice of the art remains almost as much a matter of experiment as it did before. . . . The patent cannot be sustained." *Eisenstein v. Fibiger*, 160 Fed. at 686, 688, 689.

"Now though these advantages be different from the one chiefly in the patentee's mind, the invention will not on that account fail, if there be in the concept an actual advantage, and the structure embodying it evinces patentable invention; for a patentee is entitled not only to what he specifically sees, but to what had been brought about by his invention, even though not at the time actually seen." *Kuhlman Electric Co. v. General Electric Co.*, 147 F. at 712.

"If no working machine could be made according to the invention of Arnold, then no process was ever successfully invented by him, for there is no evidence that he worked the process except by the machine. The intellectual conception of a possible process, without a potential working of it out, is not patentable. If an inventor merely conceives a mechanical process in his mind, and then sets to work to construct a machine to work that process, and works it out in no other way, and the machine fails to work successfully, then his claim as the in-

ventor of a process is as groundless as his claim as the inventor of a machine." *Union Mfg. Co. v. Lounsbury*, 2 Fish. 389.

"But when the specification for a new composition of matter gives only the names of the substances which are to be mixed together, without stating any relative proportion, undoubtedly it would be the duty of the court to declare the patent to be void. And the same rule would prevail where it was apparent that the proportions were stated ambiguously and vaguely. . . . In this case, however, the general rule is given with entire exactness in its terms, and the notice of the variations mentioned in the specification would seem to be designed to guard the brick-maker against mistakes." *Wood v. Underhill*, 5 How. at 5.

"The words of the specifications are to be taken together, and they are to be so constructed as to give effect to the meaning and intention of the person using them . . . they are to have a reasonable construction, as connected with the sentence in which they are used." *Allen v. Hunter*, 6 McLean 303.

"When he directs that a small proportion of glycerine shall be added, it is obvious that the quantity of the glycerine is to vary with the amount of cotton and boric acid used, but that the merits of the invention will not depend upon whether, in a given case, a little more or less glycerine is used. . . . 'An intelligent chemist, setting out to properly combine the enumerated ingredients into which the cotton is to be immersed, and with which it is to be impregnated could hardly go astray.' " *Seabury and Johnson v. Am Ende*, 152 U. S. 566.

"The Plaintiff testifies that, at the time he made his invention, in the latter part of 1864, the collar paper, as furnished by the paper mills, was generally much better sized and more highly calandered than . . . now. . . . The specification . . . speaks as of its date, the end of 1864, or January, 1865, and in reference to the collar

paper as then in the market, in regard to sizing." *Hoffman v. Aronson*, 4 Fish. 456. See also *Radio Corp. v. Majestic Distributors*, 6 F. Supp. at 89.

"The defendants also make the point that the character or the kind of sheets of celluloid is not sufficiently disclosed by the patent. As there was but one kind of celluloid sheets which could, at the date of the patent, be used for the purpose, and the mechanic had no need of definite instruction, because the 'cut' sheets were obviously the only ones, which were, at the time, available, the objection seems to be theoretical rather than real." *Celluloid Mfg. Co. v. American Zylonite Co.*, 30 Fed. at 440.

"The words 'approximately 5 per cent of bentonite' also occur in claims . . . Plaintiff contends that the language means that the amount of bentonite is to be equal to 5 per cent of the amount of cement used. Defendant contends that the language means 5 per cent of the whole concrete mix. . . . Where the language used in claims is ambiguous, that construction should be adopted which will render the patent valid rather than one which will render it invalid." *Kansas City S. Ry. Co. v. Silica Products Co.*, 8 U. S. P. Q. 478.

"'Substantially' means, of course, so nearly free of moisture as to make the substance which is being dried behave as if entirely dry." *Plant Products v. Phillips Chemical Co.*, 31 U. S. P. Q. 419.

"In view of the deleterious effect of the plaster of Paris which Cravens considered an essential ingredient, we cannot escape the conclusion that the Cravens patent did not disclose the composition of matter which would achieve the result described in his claims." *A. O. Smith Corp. v. Lincoln Electric Co.*, 29 U. S. P. Q. 69.

"This is borne out by the instruction of the patent that the purifying process is continued until the last detrimental traces of foreign gases are absorbed, and the tube, not only acquires its full brilliancy, but retains it indefinitely. The use of the word 'detrimental' indicates

that there are traces of foreign gases which do not impair the brilliancy of the neon color and need not be removed, and so 'detrimental' traces which do interfere with the color and brilliancy should be removed. . . . Neon containing 15 per cent helium is sold as commercially pure neon, and that such neon has a degree of purity in the sense in which the term 'pure' is applied for the purpose of the patent in suit, because such a mixture would show the characteristic color of neon." *Claude Neon Lights v. E. Machlett & Son*, 27 Fed. 2nd, 704.

"What is commercial stability? . . . I prefer to interpret the words as controlled by his actual knowledge and as meaning only such stability as he himself then knew to exist." *Parke-Davis and Co. v. H. K. Mulford Co.*, 189 Fed. at 105.

"The only novelty of the invention consists in producing the article by the method of the patent. The only description . . . is that the pieces of rubber are 'tumbled (in a barrel or revolving box) until, by their action, one on the other, the corners and edges are worn away or rounded, leaving each eraser with a soft, velvet-like finish over its entire surface.' If those skilled in the art can only ascertain how long, or under what conditions, the operation must be carried on to produce the new result, which is the essence of the invention, it is doubted whether such a description complies with the statute." *Lockwood v. Faber*, 27 Fed. at 63.

"The description of the process informs those skilled in the art how to make the product without making any experiments of their own, because it points out the best means for producing the desired result." *Holliday v. Pickhardt*, 29 Fed. at 860.

"But the mere failure of a patentee to realize all the benefits and possibilities of his invention is not fatal. The after-discovery of unsuspected usefulness in a disclosed apparatus, far from detracting from its value, may

serve to enhance it.” *Westmoreland Specialty Co. v. Hogan*, 167 Fed. at 328.

“The charge of insufficiency of disclosure is based doubtless upon the lack of disclosed mechanical detail, made necessary by the fact that the skill of the founder in pursuing foundry practice is called upon to supplement the metallurgical disclosure of the patent. It is impossible to disclose in a patent the founder’s peculiar skill, and being no part of the invention, it is not required to be made a part of the patent disclosure.” *Pittsburgh Iron and Steel F. Co. v. Seaman-Sleeth Co.*, 248 Fed. at 708.

“The limited dictionary definition of the word resin cited by the Examiner is too limited as these synthetic resins have for some years been well known and are generally referred to as resins. Claims 15 and 16 must be construed as calling for such a body in addition to the substance to which the Examiner applies the term and we must hold that the specification does disclose such a resinous substance and it is not disclosed by the Baer patent.” *Ex parte Ellis*, 19 U. S. P. Q. 118.

“The original specification stated that one of the reagents employed in this process, namely, the diphenylol naphthene material could be prepared as set forth in another copending application No. 322,100 filed on the same day with this application. . . . The examiner holds that applicant is not entitled to rely on the disclosure in the copending case to supplement this showing but we believe that since the other application was directed to the sub-process of preparing the diphenylol cyclohexanone which is one of the reagents used in this reaction, and was so referred to, that the relation of the two cases is such that the disclosure of the other case was originally included in this disclosure by reference to that application and is applicable for the purpose of supporting these examples in this case.” *Ex parte Moss*, 14 U. S. P. Q. 325, 326.



“To add more of an ingredient, for the purpose of increasing its ordinary and known effect, could never be invention. When surprising and unexpected results are achieved, as has sometimes happened in the alloying of metals, or the treatment of disease by drugs, it might be otherwise. Nor is this a case in which the patentee alone has solved an old problem by a simple expedient. Here the art was recent, and the problem much more so. Others had noted a deficiency of binding medium being gotten at the edge of the road, and an employee of the patentee had used an enlarged nozzle at the edge of the road more than two years before the patent was applied for. Engineer Neel thought more asphalt the natural remedy for the trouble about two years before the application. . . . It is also void for vagueness. Its call for ‘an extra quantity of binding medium’ at the edge, in the light of the specifications is ambiguous.” *Finley v. MacDougald Const. Co.*, 28 Fed. 2nd, 675.

“The preferred method of doing this is stated to be to take granulated cork, cover completely each particle of it with powdered magnesite and then add as a binder a solution of acetyl cellulose, putting the mixture into a mold, and subjecting it to ‘sufficient pressure to form one homogeneous mass, the amount of pressure varying with the raw materials used, but not enough to destroy the minute air cells in the finished product.’ No proportions of ingredients are stated and no specifications of pressure given save as above. . . . The whole argument for the validity of this claim comes from confusing the claim with the present product Zenitherm. It seems to be a meritorious and perhaps a novel product deserving of a patent, but its proportions and the secret of its manufacture are not to be found in this patent. . . . The patent, had it made proper disclosure, would have told him all there was to know.” *Zenitherm Co. v. Art Marble Co.*, 56 Fed. 2nd, 41, 42.



“Any lack of specifiveness arising from the difference in temperature, and from the use of the terms ‘submerged,’ ‘finely ground rubber waste,’ ‘dilute alkaline solution,’ and ‘sealed vessel,’ is not of such a nature as to mislead the skilled in the art as to the method of practicing the process.” *Philadelphia Rubber Works Co. v. United States Rubber R. Wks.*, 225 Fed. at 791.

“A patent for a process is not to be held to the strictness of specification required in a patent for a composition, and the decisions holding void applications for patents of the latter class are not necessarily applicable to process patents.” *Fullerton W. G. Assn. v. Anderson-Barngrover Mfg. Co.*, 166 Fed. at 449.

“In patent applications, the examiners are authorized to permit the use of a trade name if it is distinguished from common nouns, as, by capitalization and/or quotation marks. If the trade-name be one well known to the public, as ‘Kodak,’ ‘Cellophane,’ the name itself constitutes sufficient identification unless some physical or chemical characteristic of the article or material be involved in the invention. In that event, as also in those cases where the trade name is little known, identification by scientific or other explanatory language is necessary.” Notice by Acting Commissioner of Patents, August 24, 1934, see 16 *Jor. Pat. Off. Soc.* 784.

## II. Of Further Experiments in Applying the Invention

“If the mode of doing it or the apparatus in or by which it may be done is sufficiently obvious to suggest itself to a person skilled in the particular art, it is enough, in the patent, to point out the process to be performed, without giving supererogatory directions as to the apparatus or method to be employed. If the mode of applying the process is not obvious, then a description of a particular mode by which it may be applied is sufficient. . . . Perhaps the process is susceptible of being applied

in many modes and by the use of many forms of apparatus. The inventor is not bound to describe them all. . . . But he must describe some particular mode, or some apparatus, by which the process can be applied with at least some beneficial result, in order to show that it is capable of being exhibited and performed in actual experience." *Tilghman v. Proctor*, 102 U. S. at 728.

"Having thus set forth an 'indispensable principle of construction,' which may fairly be read into the claim, the patentee in quite different language, states the precise proportion . . . which he has used successfully. . . . Defendants do not escape . . . so long as they adhere to the 'indispensable principle.'" *Westinghouse E. and Mfg. Co. v. Saranac Lake Electric L. Co.*, 113 Fed. at 889.

"The directions of the specifications are, of course, addressed to persons skilled in the art, who know that, in adding pectin to fruit juices, the strength required depends on the pectin already contained in the fruit, which again varies. . . . The pectin must be tested with a simple sugar syrup, to tell whether the concentration is sufficient. . . . a simple syrup is known in pharmacy . . . as . . . is less . . . valid." *Douglas Pectin Corp. v. Armour & Co.*, 27 Fed. 2nd, 816.

"The specific objection of the Examiner to the specification is that it does not disclose a means for causing the strands of steel wool to cohere . . . a means for causing the threads of yarn to cohere . . . a means for causing the strands of steel wool to adhere to the threads of yarn. The applicant in his brief points out that it is a well known characteristic of steel wool that the strands will cohere . . . and will adhere to other articles . . . and that no binder is needed. . . . The applicant is entitled to his claims." *Robbins*, 9 U. S. P. Q. 414, 415.

"The use of a hardening agent is optional. If such agent be introduced the reaction will be accelerated. The amount used would depend upon the degree of acceleration desired. While McIntosh does not give the per-

centage of hardening agent used, he does state that suitable proportions may be added. It is deemed those skilled in the phenolic condensation art and familiar with the use in this art of the hardening agents specified by McIntosh would readily understand what amounts should be used." *Meigs v. McIntosh*, 4 U. S. P. Q. 333.

"Highly skilled chemists—that is, chemists whose skill in the art is no part of the invention and therefore does not have to be supplied or aided by the patent . . . couldn't practice the invention of the patent from the disclosures. They were driven to experiments. When this is necessary, especially where as here, it is claimed the art is new, courts will carefully appraise the adequacy of the disclosures and sustain or strike down the patent accordingly." *R. H. Comey Co. v. Monte Christi Corp.*, 17 Fed. 2nd, 912.

"Except in the chemical art and such related arts as involve the properties of materials, it has not been customary to restrict an applicant in his claims to the actual scope of his disclosure." *Schmidt*, 21 U. S. P. Q. 178.

"I discovered that the proper application of the heating current involves using a relatively large amperage. . . . Does such term instruct the artisan? Of itself it probably does not, but . . . Johnson states the apparent current should be 12,000 amperes at an apparent voltage of approximately 1.5 volts, . . . He says that the feed rate should be sufficiently fast . . . Later, however, the inventor says he has produced commercial tubing at about 70 feet per minute." *Steel and Tubes, Inc. v. Greenpoint Metallic Bed Co., Inc.*, 4 U. S. P. Q. 243.

"The burden devolved upon the appellants in attacking the operability of appellee's disclosure to prove, by a preponderance of evidence, that the disclosure was inoperable. This has been recognized as the rule. The courts have also been of opinion that in such cases it is assumed that the one skilled in the art attempting to operate the mechanism, or practice the process, will make such ad-

justments and corrections as would occur to those naturally skilled in the art to make the device or process operable. . . . We think it may be safely stated that, if one skilled in the art is able, by following the disclosure of an application, and with the aid of the knowledge of the art at that time can and does successfully practice a process or prepare a device described in said disclosure, then the disclosure must be held to be operable, even though others have likewise attempted to successfully practice said disclosure and have failed." *Trumbull v. Kirschbraun*, 67 Fed. 2nd, 980.

"No objection exists to a description solely because it calls for the application of heat sufficient to produce a certain result, or to percentages in terms of results. This court held a step sufficient which used the words 'overliming.' (*Wisconsin Chemical Co. v. Chute*, 261 Fed. 89.) So here, 'preparing a molten soap' quite definitely describes a step. 'Maintaining the temperature of said molten soap sufficiently high so that it is reasonably fluid' is understandable and intelligent. 'Keeping the soap molten and its temperature high' so that it may be reduced by 'spraying to reasonably divided particles' is less definite, but sufficiently so when we conclude that the inventor was speaking to those skilled in an art wherein practices necessarily required changes in temperature due to volume run and in the size of the apparatus used." *Colgate-Palmolive-Peet Co. v. Lever Brothers Co.*, 33 U. S. P. Q. 305.

"The examiner also states that the source of the tar used is not stated in all of the appealed claims. No doubt the kind of tar used would affect the product obtained but obviously the specification indicates what type of tar is suitable. The examiner also states that the claims recite vaguely 'regulating the supply of tar' without pointing out with particularity the manner in which the regulation is performed. It is not believed to be necessary to go any further than the claims do in reciting this step. A



worker in the art can readily regulate the supply of tar by adjusting the flow of the tar through the supply pipe in order to produce the products desired and as set forth in the claims." *Ex Parte Miller*, 18 U. S. P. Q. 217.

"In the specification two other ways are mentioned for assembling the parts . . . mere variances in the mode of using a single method . . . the patentee should not be prevented from claiming an equivalent by the fact that he has mentioned it in the specification." *Burdon Wire and Supply Co. v. Williams*, 128 Fed. at 934.

"The patentees having fully described one method of conducting the process it is at least questionable whether that is not sufficient to secure them against invasion of the broad process set forth in the description by a resort to any other methods of practicing it." *Electric Smelting and A. Co. v. Carborundum Co.*, 102 Fed. at 627.

"The patent mentions a coating such as paraffine of about 120 degrees. . . . The claims make no mention of any fusion point. . . . That expression seems to be an example merely of a beneficial use, and not an absolute guide; and, as an example, it gives latitude by mentioning about, not exactly, 120 degrees." *A. B. Dick Co. v. Wichelman*, 80 Fed. at 520.

"Untenable is the claim that the patent is invalid for the reason that the evidence shows that when different ores are treated preliminary tests must be made to determine the amount of oil and the extent of agitation necessary to obtain the best results. Such variation of treatment must be within the scope of the claims, and the certainty which the law requires in patents is not greater than is reasonable, having regard to their subject-matter. The composition of ores varies infinitely, each one presenting its special problem, and it is obviously impossible to specify in a patent the precise treatment which would be most successful and economical in each case. The process is one for dealing with a large class of substances and the range of treatment within the terms of the claims,

while leaving something to the skill of persons applying the invention, is clearly sufficiently definite to guide those skilled in the art to its successful application as the evidence abundantly shows. This satisfies the law." *Minerals Separation, Ltd. v. Hyde*, 242 U. S. at 270, 271, followed *Vortex Mfg. Co. v. Ply-Rite Cont. Co.*, 33 Fed. 2nd at 308.

"The mode of driving out the solvent by evaporation, described in the patent, does not disclose such novelty of function in the application of steam or hot water for that purpose as is required by the patent law. . . . It will not answer the requirements of the statute to leave the ascertainment of the precise manner in which this essential step of the process is to be practiced, to experimentation." *Wolf v. E. I. DuPont De Nemours and Co.*, 122 Fed. at 954, 957.

"He clearly indicated that a dynamo could or should be used. It is immaterial that a dynamo producing frequencies of 100,000 or less was not in existence. Fessenden believed that such a dynamo could be constructed; he pointed out that it was part of his system and . . . persisted until . . . finally built." *Kintner v. Atlantic Communication Co.*, 249 Fed. at 76.

"The patent should state and fully disclose the component parts of the composition claimed with clearness and precision and not leave a person attempting to use the discovery to find it out by experiment. If the description be so vague and uncertain that no one can tell with certainty, except by independent experiment, how to apply the discovery and what exact result may be expected therefrom, the patent is void. . . . Seher never tried any individual ketones as solvents . . . he arrived at his conclusion by what he supposed to be a reasonable deduction from the experiments that he had made. This is not sufficient." *Stevens v. Seher*, 81 O. G. 1932. See also *Collins*, 75 Fed. 2nd 1000.



“The patent was not rendered indefinite or inoperative simply because it involved trying out to ascertain the proper amounts of moisture and heat that were required to be applied to different coatings. It sufficed that the specification informed users to use oxidizers stronger than air, to point out distinctions between chemical and physical evaporation, the action of catalytic agencies in prior drying processes, the removal of such difficulties, the combination of increasing heat with fresh air, the presence of moisture to increase the drying as to usefulness, and differences in drying shellac, including the various temperatures and moistures to be used for different varnishes. Such descriptive information, even though the exact humidity or oxygen is not embodied, is nevertheless sufficiently indicative to the skilled engineer how the process may be used successfully.” *Wenborne-Karpen Dryer Co. v. Cutler Dry Kiln Co.*, 285 Fed. at 75.

“The defendant attempts to show that the Baekeland patents do not sufficiently disclose the methods . . . do not specify the precise way in which the heat shall be applied . . . amount of the heat and the time of the application nor . . . prescribe mixing on differential rolls. But these patents do not claim the invention of a mechanical process . . . the moulding is used to produce the chemical reaction. . . . The one skilled in the art . . . must read them as a chemist.” *General Bakelite Co. v. General Insulate Co.*, 276 Fed. at 184.

We are convinced from the testimony that the disclosure is sufficient to enable one skilled in the art to practice the invention. It is true that conditions of temperature, quality of the ingredients used, and perhaps other elements, require care and to some extent experimentation to produce the best results. But the disclosure is addressed to those skilled in chemistry. . . . It is urged that it does not appear from the patent at what stage the catalyzer is to be added, and it is contended that if it be added last . . . the process of the patent cannot be ef-

fectively carried out. . . . But . . . the testimony . . . shows . . . that successful working out of the process can be had, even by adding the catalyzer last." *Toledo Rex Spray Co. v. California Spray Chemical Co.*, 268 Fed. at 204, 205.

### III. Of Directions Implied in the Disclosure

"Attack is made upon the . . . words "excess of lime"; it being contended that the expression is too indefinite and vague. . . . The purpose of 'over-liming,' as well as its manifestations, clearly appears in the description. It is comparatively easy for one skilled in the art to follow the directions." *Wisconsin Chemical Co. v. Chute*, 261 Fed. at 92.

"The word 'small' . . . may be properly understood as commonly used . . . is relative. . . . A patentee has the right to use such words as to him best describe his intention, and they will be so construed as to effectuate that result." *H. J. Wheeler Salvage Co. v. Rinelli and Guardino*, 295 Fed. at 726, 727.

"A patentee may define his own terms, regardless of common or technical meaning, and fairness to the patentee requires the court to accept his definitions of words, phrases and terms. . . . The words of the claims are sufficiently explained in the descriptive part of the specification." *International Cork Co. v. New Process Cork Co.*, 6 Fed. (2) at 422.

"True the patent describes the scales of mica used as 'laminated elementary scales' . . . do not necessarily mean the 'ultimate' scale as nature has made mica; but the elemental scale into which mica . . . can, considering the elements of time and cost, be practically resolved." *Mica Insulator Co. v. Commercial Mica Co.*, 166 Fed. at 442.

"The inventor was not required to specify how the process could be most economically used. It was enough

if he described it that one skilled in the art could use it. . . . A patent for a process is not to be held to the strictness of specification required in a patent for composition, and the decisions holding void applications for patents of the latter class are not necessarily applicable to process patents. . . . Obviously he was not required to experiment with all kinds of acids, and to state in his specifications what acids would and what would not be suitable." *Fullerton Walnut G. Association v. Anderson-Barngrover Mfg. Co.*, 166 Fed. at 449, 450.

"Appellant contends here that the phrase 'positive column light' is introductory and that the positive column light characteristic is inherent in the kind of tube he disclosed in his application, and that he was not required to disclose matters which were within the knowledge of those skilled in the art in order that he be entitled to make a claim, for interference purposes, containing such an introductory phrase. . . . He did not disclose in his specification that the gas pressure, the current, the length of the discharge tube, and the shape of the discharge tube are selected so as to produce positive column light. . . . The original specification is wholly silent on the matter. There is nothing said about gas pressures in the specification or current densities used for the discharge. The tube shown is long and this favors the supposition that positive column light may be inherent. After examining the authorities cited, however, we are not satisfied that positive column light is inherent in appellant's disclosure. . . . It is of course immaterial, if the disclosure as originally presented does not inherently involve positive column light, that this is the type of light appellant may have intended to produce. Evidence wholly extraneous to the application cannot be relied upon to show this fact." *Buttolph*, 73 Fed. 2nd, 937, 938.

"Bearing in mind the nature of the subject matter, the description of the pale blown castor oil, or cold air blown

castor oil, is reasonably sufficient to apprise one familiar with the art as to what is meant by the patent and how the product can be satisfactorily made." *Tumbler v. Baltimore Paint & Color Works, Inc.*, 26 U. S. P. Q. 68.

"The proportions of water and albumen to be used is not set forth. Because of the lack of statement as to it we do not think the patent is invalid. Any proportions within reason will answer. . . . It is only necessary in a patent to point out one way of carrying out the process. . . . Both patents . . . distinctly point out that albumen is to be uncoagulated . . . that the application of heat will set the albumin. . . . The degree of heat to be applied is sufficiently referred to." *International Cork Co. v. New Process Cork Co.*, 6 Fed. (2) at 421, 422.

"It is true that chemistry has so advanced during the last twenty years that the terms employed by Coslett in the patent in suit are possibly not such as would be employed by chemists of the highest standing today. But these terms can be understood. . . . He is the first to suggest a dilute acid and the first to give a definite and workable formula therefor and definite directions for using this formula." *Parker Rust Proof Co. v. Ford Motor Co.*, 6 Fed. 2nd 654, 655.

"If the use of the flexible lining and manipulated jack-screw was so inherent in the process described . . . in his claims that the process could not be performed without them, or if skilled workmen everywhere had uniformly found in the practice of the patented process the two vital features in question, it is possible that the charge of anticipation might be avoided. . . . But it is obvious that neither of these principles is applicable, since the claims do not mention adjustable nor extensible braces, and as the patented process has not been fully accepted, recognized, practiced or used." *General Sub-Const. Co. v. Netcher*, 167 Fed. at 559.

#### IV. Of Theories Underlying Inventions

“Theories do not control the decision in patent cases. . . . But a correct and certain knowledge of the principle by which the result is reached will often enable the patentee or his solicitor, to cover, with many general words, many different devices in which it may be applied.” *Brown v. Stilwell and Bierce Mfg. Co.*, 57 Fed. at 739.

“A patentee may be baldly empirical, seeing nothing beyond his experiments and the result; yet if he has added a new and valuable article to the world’s utilities, he is entitled to the rank and protection of an inventor.” *Diamond Rubber Co. v. Consol. Rubber Tire Co.*, 220 U. S. at 435.

“He describes the process, the mode of operation and the result, and the means of obtaining it. The scientific principle is not part of the process, is not patentable, and need not be set forth.” *Emerson Co. v. Nimocks*, 99 Fed. at 740, quoted and followed *Toch v. Zibell Damp Resisting Paint Co.*, 233 Fed. at 997.

“If Malignani was mistaken in his belief that there were emanations . . . he is yet entitled to whatever benefit results from doing what he directs shall be done.” *Malignani v. Jasper Marsh Consolidated El. L. Co.*, 180 Fed. at 447.

“It is sufficient if his description will enable one skilled in the business to accomplish the desired results. Whether the inventor could stand a successful examination as to the speculative ideas involved is immaterial. . . . The plaintiffs give in their specification an enameling mixture, not confining themselves to that. They state that the one mentioned is only one formula by which the result may be worked out.” *St. Louis Stamping Co. v. Quinby*, 16 O. G. 135.

“The specification unnecessarily contains a scientific theory . . . not now the generally accepted explanation.



. . . It matters not." *U. S. Mitis Co. v. Carnegie Steel Co.*, 89 Fed. at 346.

"It construing his document, we may ignore his theory as surplusage and rely upon other parts of his document." *American Bell Telephone Co. v. National Tel. Mfg. Co.*, 109 Fed. at 1008.

"The theory of the Bowes was erroneous. Applying a softener and solvent to the vulcanized rubber of the tube would not devulcanize the rubber as they supposed. However, it was not the theory, but the process that was patented; and the fact that the Bowes had an erroneous theory as to how their process worked would not render the process unpatentable." *Knick v. Bowes "Seal Fast" Corporation*, 25 Fed. 2nd, 445.

"He is not to be deprived of the benefit of his invention because he may have been mistaken in his statement of the reasons why the result was secured, or may have failed to correctly state the theory of their operation." *Westinghouse E. and Mfg. Co. v. Montgomery E. L. and P. Co.*, 153 Fed. at 901.

"Whether Mr. Fleming's theories of rectification were right or not have nothing to do with the question of invention or validity. The patentee may not understand his own mechanism: but if he shows it and describes it, and produces a new result, the law is satisfied." *Marconi Wireless T. Co. v. DeForest Radio T. and T. Co.*, 243 Fed. at 563.

"He advanced no theory in his specifications: it was not necessary for him to do so. All that the law required of him was a plain statement of his process set forth in sufficient detail to be understood by a person skilled in the art. If the result of his process is a product which he describes as 'devulcanized rubber having substantially the characteristics of fresh rubber and capable of being used in like manner and for like purposes,' and if it further appears that this is the first time that this particular



process was disclosed to the world, Marks was entitled to his patent." Philadelphia Rubber Wks. C. v. United States R. R. Wks., 229 Fed. at 151.

"It was not essential that they should either understand or set forth the principle on which their process operated. . . . 'It may be that the inventor did not know what the scientific principle was, or that, knowing it, he omitted, from accident or design, to set it forth. That does not vitiate the patent. He sets forth the process or mode of operation which ends in the result, and the means for working out the process or mode of operation. The principle referred to is only the why and wherefore. That is not required to be set forth.' " Petroleum Rectifying Co. v. Reward Oil Co., 260 Fed. at 181, quoting Andrews v. Cross, 19 Blatchf. at 503, which was followed and quoted in Eames v. Andrews, 122 U. S. at 55.

"It is specifically provided therein that the oil shall be subjected to catalytic action separately from the gaseous fuel constituent, and therefore they are not met by the Constantinescu disclosure. As to these two claims, as above noted, they were rejected by the board upon the reference Larkin alone. While appellant insists that there are a number of patentable distinctions between said claims 11 and 16 and the disclosure of Larkin, we find it necessary to refer only to one, to wit, the subjecting of the oil to catalytic action separately from the gaseous fuel constituent. Larkin does not anywhere in his specification refer to any catalytic action to which the oil is subjected, but he does show that the oil is vaporized by heat while the oil passes through an asbestos wick. The question upon this branch of the case is whether asbestos subjects the oil to catalytic action when the gaseous fuel constituent is absent. . . . Neither appellant's specification nor the references refer to asbestos as a catalyzing agent. The Solicitor argues that, the Board of Appeals having found that the asbestos wick shown by Larkin is

a catalyzer, the burden is upon appellant to produce evidence or authority to indicate that the board was wrong as to its finding of the fact upon this point. We think that, if asbestos as employed by Larkin has catalytic properties, the board should have disclosed the basis upon which such fact was found by it. We find nothing in the record to warrant such finding." *In re Rosier*, 17 U. S. P. Q. 495, 496.

"No process patent is in theory either helped or harmed by the excellence or worthlessness of the disclosed apparatus by which it is illustrated." *Petroleum Rectifying Co. v. Reward Oil Co.*, 260 Fed. at 182, quoting *Buffalo Forge Co. v. City of Buffalo*, 255 Fed. at 83.

"And we do not think it a fair construction of the patentee's language to hold that it requires the heat to be raised in all cases to a degree only a little below the point of fusion. He does not attempt to give any more definite direction than that all parts of the wheel must be raised to the same temperature, suggesting in a parenthesis '(say, a little below that at which fusion commences).' He fixes a maximum. The heat must not reach the point of fusion, and the prescribed minimum is that degree where the heat of the different parts of the wheel is equal. Within those limits the degree is left to the judgment of the operator." *Mowry v. Whitney*, 14 Wall. at 646, see also *Eibel Process Co. v. Minnesota and O. Paper C.*, 261 U. S. 45 and *Catalin Corp. v. Catalazuli Mfg. Co.*, 79 Fed. 2nd 594.

"The description in the specification covers the temperature and gives illustrative proportions of the amount and composition of the flux. The invention is addressed to ores of different characters and to available fluxes of variable silica content. In view of the inherently variable problems, the claims and specifications are, we think, definite enough." *United Verde Copper Co. v. Peirce-Smith Converter Co.*, 7 Fed. (2) at 15.

"The patentee . . . is not confined to his specific means." *Malignani v. Hill-Wright Electric Co.*, 177 Fed. at 433.

## V. Of Drawings to Illustrate the Invention

"The apparatus shown in a process patent is only to show that the process may be practically applied. . . . Illustrative apparatus does not limit the process patentee." *Moore Filter Co. v. Tonopah-Belmont D. Co.*, 201 Fed. at 541.

"It is true that Lindquist's drawings do not show such an arrangement, . . . but all he had to do was to show one mode of arrangement." *Sundh Electric Co. v. General Electric Co.*, 198 Fed. at 125.

"All applications for processes alone should be entered as filed complete when all the parts except the drawing, model, or specimen are filed. When . . . deemed necessary for more complete disclosure . . . the Examiner . . . can make a requirement accordingly." *Ex parte Schmidmer*, 115 O. G. 249.

"The invention of the application of Thompson was a bicycle saddle spring . . . a drawing was necessary to show the invention claimed. . . . The invention . . . herein is a process. . . . The drawing furnished must be considered in the same light as additional illustration in a case in which a drawing was originally filed or as additional description." *Ex parte Russell*, 84 O. G. 2021.

"It is not possible to show in a drawing the character of leather, and that seems to be what the applicant has invented. . . . It is held that the application may be accepted as complete but it is not intended by this to rule upon the question whether a drawing shall be required subsequently." *Ex parte Kozminski*, 103 O. G. 429.

"It is not necessary to retain in the drawing of an application for a patent on an article a figure to illustrate a process or step in its manufacture." *Ex parte Henry*, 99 O. G. 1170.

## VI. Of Errors in the Disclosure

“If the specification . . . contains statements that are erroneous they would invalidate the patent only if it could be proved conclusively that they were introduced for the purpose of deceiving the public. . . . If this patent said you can make anhydrous sugar out of green cheese it would not affect the validity of the claims as to the hydrate process.” *International Patents D. Co. v. Penick and Ford*, 30 U. S. P. Q. 304.

“We need not go into any discussion of possible corrections. It appears by the testimony . . . that ‘if one employs ten molecular proportions of nitrite of soda, instead of one molecular proportion, one still obtains the water-soluble safranine azo naphthol of the patent.’ There is, of course, more waste, and consequently greater expense, but it cannot be said that the specification, read either way, fails to show one skilled in the art how to make water-soluble safranine azo-naphthol.” *Badische A. and Soda Fabrik v. A. Klipstein and Co.*, 125 Fed. at 553.

“Improvement in pill machines. . . . It is also objected that the specification names glycerine as a substance to be used for coating, and that glycerine is not used as a coating and will not act as such. This is immaterial, and aside from the invention. . . . The specification refers to any coating solution which will coat. The word ‘glycerine’ may be rejected as surplusage.” *McKesson v. Carnrick*, 9 Fed. at 47, compare *Producers and Refiners Corp. v. Lehmann*, 18 Fed. (2) 495.

“Subsequent experiments have shown that the patentee was mistaken respecting the quantity of chloroform obtainable from acetones (which were previously used for its production), and that he was probably mistaken respecting the quantity obtainable from the higher boiling properties of ingredients of crude acetates, and that other statements contained in his specifications are inaccurate. These mistakes do not, however, affect the validity of the

patent. Conceding them, the fact remains that he was the first to discover the process described of manufacturing chloroform from crude acetates of lime, and that this was a highly valuable discovery." *Michaelis v. Roessler*, 34 Fed. at 326.

"The patentee does not say that all of the basic colors will fix properly, but that 'most' of them will do so. . . . Which are the basic colors that will fix and which will not fix? . . . The specification does not so say. . . . Prior to the application it is said the use of a mordant was universal . . . and the mordants usually employed were well known. . . . In failing to mention these did the patentee intend to inform the art that he had discovered a substitute for their use, or did he expect that the skilled printers would continue to do what they were accustomed to do? . . . The essential feature upon which an invention rests should not be left to conjecture and inference." *Bracewell v. Passaic Print Wks.*, 107 Fed. at 474, 475.

"The error consists in calling for the 'addition of . . . nitrate of sodium,' instead of the same quantity of 'nitrite of sodium' . . . no one skilled in the art would be misled . . . 'since it was well known at the date of the patent that it was necessary to use nitrite of sodium to carry out the diazotization . . . and that the use of the word nitrate for nitrite was common.' . . . The omission from paragraph 4 of any express direction for a second diazotization . . . is immaterial, since anyone skilled in the art would have understood . . . because it is so stated in the general description. . . . But here there has been an identifying test put into the patent by the solicitor; the patentee accepts such patent, and applies for no re-issue, alleging no mistake; and the court is asked to strike out the test altogether . . . dismiss the bill." *Matheson v. Campbell*, 78 Fed. at 913 and 920, 921.

"The only difficulty alleged to exist either in specification or claim with the original application is that salt was then said to be crystallizable. Takamine apparently then



supposed that he had crystallized, or could crystallize, his salts, and he so disclosed his discovery . . . his application was erroneous in that particular. . . . If his result is a new invention, then of course it could not be introduced by amendment, but otherwise the amendment is unobjectionable. . . . The salt remains the same invention . . . the point is not well taken." *Parke-Davis and Co. v. H. K. Mulford Co.*, 189 Fed. at 114.

"In taking out his patent . . . he meant by bone dust bone-black . . . it is proved that, in common speech, at that time, that article, when ground fine, was called bone dust, to distinguish from the coarser bone-black" *National Filtering Oil Co. v. Arctic Oil Co.*, 4 Fish. 514.

"The contention as to invalidity because of inoperativeness rests on the proposition that 'amyl oil' (which is amyl alcohol), referred to in the patent as a solvent for soluble cotton, is not such a solvent. Of course, amyl acetate is. This seems highly technical, because I think the skilled man would at once understand that amyl acetate was meant." *Oriental Tissue Co. v. Louis De Jonge and Co.*, 235 Fed. at 295.

"The objection that, as all the fluxes are claimed in making the compound, if any one of them can be found which cannot be used for that purpose, the patent is void, cannot be sustained." *Allen v. Hunter*, 6 Mclean 303.

"Rafter . . . made torn excelsior. . . . It seems clear that he was entitled to a patent. But the application did not describe this product specifically . . . whether . . . from confusion in his own mind or from failure to appreciate the qualities of the torn product or from failure to explain his machine with precision to his attorneys . . . . He sold the product to the public and operated the device successfully in a public manner. When he abandoned the patent application, this invention became the property of the public." *Antonsen v. Hedrick*, 29 U. S. P. Q. 464.



“The argument with regard to the sufficiency of the specification is based largely upon the fact that the specifications of the Schaub patents call for a cellulose having a nitrogen content which renders it soluble in methyl alcohol, ‘preferably cellulose penta-nitrate.’ . . . Penta nitrate is a theoretical or laboratory product, unsuitable for the manufacture of solid alcohol. However, cellulose penta-nitrate is not mentioned in any claim in issue, all of which specify nitrocellulose soluble in methyl alcohol. This is a sufficient description since it enables an operator to select the proper ‘substance.’ ” *Theroz Co. v. United States Ind. Chem. Co.*, 14 Fed. 2nd, 640.

## CHAPTER 4

### OF THE INVENTION; ITS NATURE AND ITS DATE

Invention is a word the definition of which it is profitless to attempt. A chemical invention is held by some Courts to be what the patent statute refers to as a patentable discovery, as distinguishable from inventions which are mechanical in nature. A discovery to be patentable must have the attributes of an invention, but the basic truth upon which rests a process may come to the discoverer suddenly and unexpectedly. He may not understand the law upon which the process operates, and he may be unable to explain the cause of certain phenomena, nevertheless, if he be the first to give the world as a result of his method a new and valuable article of manufacture he is entitled to protection, both on his process and product.

Invention based on other considerations also appears in the decisions excerpted below.

#### WHAT THE COURTS HAVE SAID

##### I. The Nature of Invention

“Imagination and invention are frequently discussed by shallow writers on psychology as involving the same mental processes—as if dreams and reality were the same thing. No doubt many chemists and manufacturers dreamed of synthetic rubber; but it curiously became a fact through the experiments of widely separated persons in Germany and England. The next step is to make the substance practical; that is, to make it capable of serving human needs at an expenditure within the value of the thing produced. It is only when the thing has

passed through these three stages that it becomes a useful invention. Invention, therefore, in the economic sense, is clearly a product of the imagination, which will pass the social test of use within the bounds of the expense of production, limited by the value of that use." *Murphy Wall Bed Co. v. Rip Van Winkle Wall Bed Co.*, 295 Fed. at 751.

"Ordinarily invention demands . . . some resumption of a line of experiment from which the art had looked away . . . some departure which required originality or independence of conception; something more than routine testing of obvious combinations." *Ruben Condenser Co. v. Aerovox Corp.*, 77 Fed. 2nd, 268.

"The Hoskins and Spinks patent can lay no claim to invention in the conception that there can be an artificial substitute for billiard-chalk . . . nor in the conception of compacting into blocks . . . for such . . . was described in the Peple patent; nor in the conception of any treatment of the material used. . . . As artificial billiard chalk was already well known, might not the ingredient of this new Italian chalk be ascertained and made the base for an artificial chalk. Several analyses were made. . . . It is true, that . . . the Italian chalk had not yet been analyzed. . . . But the analysis . . . led to no new kind of article . . . it was nothing but a chemical search into a chalk already in the art, for the ingredients that gave to such chalk its excellence. It was research, but not patentable discovery." *Hoskins v. Matthes*, 108 Fed. at 409, 411.

"Prophecy is often greater than invention, but it is not patentable." *Treibacher Chemische Werke, etc., v. Roessler & H. C. Co.*, 214 Fed. at 413.

"Neither hope nor prediction is invention." *General Electric Co. v. P. R. Mallory and Co.*, 298 Fed. at 583.

"Suggestion is not invention. Accomplishment is the milestone of progress." *A. B. Dick Co. v. Simplicator Corp.*, 30 Fed. 2nd, 714.

"Invention involves conception of at least some function, as well as the selection of the means whereby that function may be operatively secured." *United States Metallic P. Co. v. Hewitt Co.*, 236 Fed. at 742.

"Invention is a word the definition of which the courts do not attempt. . . . There must be more than a theory or mental concept, viz. a tangible reduction to practice." *Marconi Wireless T. Co. v. De Forest Radio T. and T. Co.*, 243 Fed. at 564.

"Invention in the nature of improvements, is the double mental act of discerning in existing machines or processes or articles, some deficiency, and pointing out the means of overcoming it." *General Electric Co. v. Sangamo Electric Co.*, 174 Fed. at 251.

"The patentee's invention did away with the centuries old use of animal skin drum heads and gave the musical art a drum head of treated silk, impervious to weather conditions and of sustained tonal quality. . . . I guess I made thousands of different drum heads, until I got it perfect, spent my whole life in it." Valid. *Hammond v. Drumhead Co.*, 32 U. S. P. Q. 534, 535.

"We do not agree . . . that the mere testing of the various proportions of the two glycols involved, in the absence of water, and arriving at a satisfactory result, was lacking in invention or that it resulted in that which was obvious to the chemist skilled in the art. . . . Appellants, by their testing of the mixtures made in the proportions set out, made a discovery or invention within the meaning of the patent laws." *Cox*, 23 U. S. P. Q. 350.

"Mershon . . . was experimenting in a field in which the guide posts were plainly marked by earlier explorers . . . While an invention should not be invalidated merely because it comes after experimentation, still the experiment which succeeds must require some ingenuity, if it is worthy of being granted a patent monopoly. . . . Merely to run down every obvious alley until the best route to the desired goal is found cannot be deemed invention." *Mer-*

shon v. Sprague Specialties Co., 14 F. Supp. 364, 365, quoting *Fink v. Foscatto*, 79 Fed. (2) 842, 843.

"The difficulty was, not the mottling, but the doing so at a cost that would allow him to use it. . . . The use of cotton fiber as a base for rubber tiling . . . was . . . known . . . Stedman's sole suggestion was to use fibre stock. . . . Result was the natural advance of the art." *Stedman v. Puritan Rubber Mfg. Co.*, 16 Fed. 2nd, 742, 743.

"The patent law need look only to the last step which overstrode what had so far balked advance." *United Chromium v. International Silver Co.*, 60 Fed. 2nd, 916.

"The novelty in the invention rests in that discovery; its validity as an invention in the fact that it did not remain merely a discovery, but that the inventors disclosed a formula, a recipe, by which in ways in general well known, though new as an entirety, that discovery could be made useful to the art at large." *Catalin Corp. v. Catalazuli Mfg. Co.*, 79 Fed. (2) 597.

"In chemistry it is possible to proceed by a system of trial and error, varying formulas. . . . Ordinarily, invention demands more than that; some resumption of a line of experiment from which the art had looked away . . . some departure which required originality or independence of conception." *Ruben Condenser Co. v. Aero-vox Corp.*, 26 U. S. P. Q. 63.

"While it is always the safest course to test a putative invention by what went before and what came after, it is easy to be misled. Nothing is less reliable than uncritically to accept its welcome by the art, even though it displace what went before. If the machine or composition appears shortly after some obstacle to its creation, technical or economic, has been removed, we should scrutinize its success jealously; if at about the same time others begin the same experiments in the same or nearby fields, or if these come to fruition soon after the patentee's, the same



is true. Such a race does not indicate invention. We should ask how old was the need; for how long could known materials and processes have filled it; how long others had unsuccessfully tried for an answer." *Ruben Condenser Co. v. Aerovox Corp.*, 26 U. S. P. Q. 63.

"Knowledge after the event is always easy and problems once solved present no difficulties. Expert witnesses glibly testify that the new thing for which the world has been striving was always at hand and so easy of discovery that it required the merest mechanical skill to discover or produce it. But the law requires other tests of invention than subtle conjectures of what might have been discovered and yet was not. It regards a change as evidence of novelty. Degrees of change, dividing inventions into primary and secondary, give a proportionate dominion to a patent. A patentable invention may be the successor of all that went before and only a step beyond the prior art in the march of improvement." *Root Refining Co. v. Universal Oil Products Co.*, 26 U. S. P. Q. 109.

"It is enough that he had both a mental conception and a tangible reduction to practice." *Procter and Gamble Co. v. Berlin Mills Co.*, 256 Fed. at 28.

"The invention does not lie in the mere mechanical changes in the circuit connection of the motor, but, in connection therewith, must be found the conception of making these changes to secure the advantages sought." *Westinghouse Electric and Mfg. Co. v. Dayton Fan and Motor Co.*, 106 Fed. at 730.

"In contemplation of law an invention does not exist until the inventor's ideas have been reduced to practical form." *American Graphophone Co. v. Leeds and Catlin Co.*, 170 Fed. at 331.

"Invention is always a function of the particular situation, of the conditions which preceded and followed the appearance of the composition or the machine." *E. I. du Pont de Nemours v. Glidden Co.*, 18 U. S. P. Q. 243.

“The object of an invention is not the invention.” *Kaumagraph Co. v. Superior T. M. Mfg. Co.*, 72 Fed. 2nd, 419.

“Invention is to be determined in the light of historical facts rather than what might appear to be simple in the light of hindsight.” *Lakeshire Cheese Co. v. Shefford Cheese Co.*, 72 Fed. 2nd, 499.

“The word ‘invention’ ‘cannot be defined in such a manner as to afford any substantial aid in determining whether a particular device involved an exercise of the inventive faculty or not.’” *Kurtz v. Belle Hat Lining Co.*, 280 Fed. at 279, quoting *McClain v. Ortmyer*, 141 U. S. at 427.

“Mr. Leonard quite literally stumbled on an idea, the size of which did not occur to him until he changed his style of output. . . . Yet a man is entitled to all the advantages of stubbing his own toe, if he describes just how he did it.” *H. Ward Leonard, Inc. v. Maxwell Motor Sales Co.*, 288 Fed. at 72. See also *Radiator Specialty Co. v. Buhot*, 39 Fed. (2) at 376.

“The patent law abounds in instances in which patents have been upheld where the inventor stumbled upon the discovery in total oblivion of the reason why effect followed cause.” *Badische Aniline and Soda Fabrik v. Kalle*, 94 Fed. at 174.

“The patentee, Johnson, may not have known anything about catalysis, nor why, scientifically, his silicate enameled converter produced the desired results. Nevertheless, it was he, not appellants, who discovered and disclosed to the art that advantageous results could be obtained by the use of such a converter. All that appellants did in this connection was to discover and give to the art the scientific explanation of the successful operation of the Johnson converter. Appellants are not entitled to a patent for this scientific explanation. . . . In view of the fact that it was old to employ absorption agents, ‘powdered coke or vegetable charcoal,’ during the

hydrolyzing process, as disclosed in the patent to Hirsh, we are of opinion that the patent office tribunals reached the right conclusion." *Ex parte Ebert*, 13 U. S. P. Q. 126.

"The claim that the patentees of the patent in suit are not the original discoverers of the process patented because an employee of theirs happened to make the analyses and observations which resulted in the discovery cannot be allowed . . . the patentees planned the experiments in progress when the discovery was made . . . they directed the investigations day by day, conducting them in large part personally and . . . they interpreted the results." *Minerals Separation, Ltd. v. Hyde*, 242 U. S. 270.

"Although there is some showing in *Burda's* cross-examination that a part, at least, of the conception may have originated in his mind, it is apparent that he was of opinion, at the time he testified that the experiments were conducted in conformity with *Palmer's* directions, and that *Burda* himself was not claiming to be the one responsible for their conduct or methods. *Palmer* was fully cognizant of whatever was done, at the time. *Burda* was . . . in the employ of *Palmer*, at *Palmer's* directions." *Borglin v. Palmer*, 21 U. S. P. Q. 588; 477 O. G. 759.

"When dealing with a process patent the chancellor should keep in mind that he is not to sustain a patent for things which the Lord made, for properties that are possessed, but only for the things that man does with those properties, and the way a man uses those properties." *Swann Research, Inc. v. Dow Chem. Co.*, 28 U. S. P. Q. 24.

"A discovery in the useful arts . . . must be a discovery not of the mind, but by the actual use of physical means to develop a physical result." *Stevens v. Seher*, 81 O. G. 1932.

"The inventions made involve . . . the unusual feature of first locating or discovering the difficulty to be overcome and its relation to the whole problem, before

any inventive steps were taken to solve it. In other words, these patents involve, so to speak, two series of inventions: First discovering the difficulty; and second discovering means to overcome that difficulty, for the proofs show that, while the mischief or difficulty was time and again seen in the broken or imperfect cylinders made, the complexity of the process, the many factors affecting it, and the difficulties incident to studying molten glass, all united to so obscure and confuse that it was impossible to locate the real cause of an objectionable result." Consolidated Window G. Co. v. Window G. Mach. Co., 261 Fed. at 373.

"There is a distinction between invention and discovery which must not be lost sight of in dealing with process patents. . . . The basic truth upon which rests the process may come to the discoverer suddenly and unexpectedly. He may not be able to understand the law upon which the process operates . . . if he be the first to give to the world a result of his method a new and valuable article of manufacture he is entitled to protection." *Badische Anilin and Soda Fabrik v. Kalle*, 94 Fed. at 173, 174.

"The invention of the patents in suit did not reside in the selection of particular delayers, accelerators and extenders already known to the art, but in the conception of the possibility of their association in the particular way defined in the claims in issue, whereby he met the exacting conditions and solved the complicated problems in the permanent waving of hair exothermically." *Zotos Corp. v. Rader*, 31 U. S. P. Q. 226. *Reversed*, 34 U. S. P. Q. 354.

"It must be obvious, also, that there is not only a distinction, but a wide difference between one who merely invents a new method or process, by which a well-known fabric, product, or manufacture is produced, in a cheaper or better way, and the discovery of a new compound, substance or manufacture, having qualities never found to exist together in any other material. In the first case

the inventor can patent nothing but his process, and not his composition of matter. In the latter, both are new and original and both patentable—not severally, but as one discovery or invention. It is evident, also, that the question of infringement must, in such cases, depend on different conditions.” *Goodyear v. Central R. of N. J.*, 1 Fish. 626. See also *Vacuum Oil Co. v. Grabler Mfg. Co.*, 62 Fed. (2) at 55.

“Process patent and . . . product patent. . . . It was patentee’s combined conception—his appreciation of the problem, its difficulties, the remedies, and the practicability of the steps taken to accomplish the result of making the product a commercial success—that determines patentability. . . . The substitution of forged steel for malleable castings may not alone have been sufficient. . . . The problem confronting the patentee was one which called for a merchantable fulcrum, of great strength, of resiliency, using the least possible amount of material . . . with one end supplying . . . so located. . . .” *American Steel Foundries v. Damascus Brake Beam Co.*, 267 Fed. at 575, 576.

“It is doubtless true that by experimenting with the whole list of essential oils any competent chemist could have ascertained that fusel oil would . . . be efficient. . . . But this is not enough to defeat a patent.” *Celluloid Mfg. Co. v. American Zylonite Co.*, 35 Fed. at 301.

“There mere selection of a material, and this too, by a process of exclusion has been deemed sufficient to sustain patentability.” *Naylor v. Alsop Process Co.*, 168 Fed. at 919, quoting *Badische A. and S. F. v. Kalle*, 94 Fed. at 174.

“To ascertain what it was in these glands which possessed these physiological properties . . . to isolate it . . . so as to obtain it in a stable, pure and concentrated form, efficient and constant in action. . . . Takamine did . . . his invention—this product—was a highly meritori-



ous one." Parke-Davis and Co. v. H. K. Mulford and Co., 196 Fed. at 497.

"One class of evidence, which often carries much weight, is the necessity for a series of experiments before the result can be arrived at. Such evidence raises a strong inference that the result was not obvious, and constitutes a real addition to public knowledge. But for such experiments to be of much value the patentee must have started his experiments with knowledge of the state of the art, or his experiments may have succeeded in enabling him to redisclose only what was already known. General Electric Co. v. De Forest Radio Co., 23 Fed. (2) 705.

"The problem was how to heat different sections of the coiled hair for different periods of time, that is, how to practice the method, and the obvious solution of that problem was by duplication of the electrical heating device common to the art, the multiple units being so connected that they might be operated singly or simultaneously. This was but the exercise of the mechanical and electrical skill naturally to be expected. The fact that no method patent was applied for or issued seems to us immaterial. Having discovered a new and useful method, which we assume was patentable as such . . . a machine patent was applied for and issued upon an unpatentable device. This was an error in judgment and administration for which the courts cannot and should not afford a remedy." Nestle Le Mur Co. v. Eugene, 55 Fed. (2) 858.

## II. The Completion of Invention by Reduction to Practice

"A conception of the mind is not an invention until represented in some physical form, and unsuccessful experiments or projects, abandoned by the inventor, are equally destitute of that character." Clark Thread Co. v. Willimantic Linen Co., 140 U. S. 489.

"If an inventor merely conceives a mechanical process in his mind, and then sets to work to construct a machine

to work that process, and works it out in no other way, and the machine fails to work successfully then his claim as the inventor of a process is groundless as his claim as the inventor of a machine." *Union Mfg. Co. v. Lounsbury*, 2 Fish. at 393.

"That somebody had, in fact, made the same composition before he did does not necessarily defeat his patent. In one sense, he would not be the first inventor in such case. But, in the sense of the patent statute, he is the first inventor who, by his own thought, makes an article or material and first perfects and adapts his discovery to actual use, although some one may have previously made a similar article without putting it to practical use or giving his discovery to the public in any way." *Warren Bros. Co. v. City of Owosso*, 166 Fed. at 315.

"In the old process of making ruby-colored glass, it was sometimes found that a portion of the article . . . retained the amber color. Undoubtedly this fact led Locke to his discovery; but prior to Locke, any amber color in the ruby glass was considered accidental, and the article imperfect. . . . Injunction granted." *Libbey v. Mt. Washington Glass Co.*, 26 Fed. at 758,759.

"It appears . . . that Marsh made his discovery by accident. . . . It was an inventive act . . . to extricate this most valuable material from the vague generalities . . . and place it among the instrumentalities of science as an electrical element." *General Electric Co. v. Hoskins Mfg. Co.*, 224 Fed. at 471.

"Upon reducing the invention to practice Roos was confronted with the problem of supplying machinery for the production of tenacious foam on the large scale required in the commercial exploitation of the invention. . . . Within two years . . . he had perfected a foam-producing machine . . . made to synchronize with the company's existing machinery . . . three billion square feet of such wall board." *Bayer v. Rice*, 24 U. S. P. Q. 41, 42.

“Complete invention amounts to demonstration.” Sherwood v. Drewson, 130 O. G. 657, but see Bennett v. Fitzgerald, 9 U. S. P. Q. at 214.

“He . . . produced an iron salt of dithiocarbamic acid and after noting its properties were similar to Molony’s patented accelerator he gave Molony some of the salt for the purpose of testing. . . . He made such tests . . . and actually produced vulcanized rubber. . . . In order to establish a reduction to practice it is not necessary to show a commercial use. . . . The fact that it darkened the rubber may have been a reason for not putting it into commercial use, but it would not be a ground for holding that the process had not been reduced to practice. . . . It was only necessary to inspect the piece of rubber produced.” Nikaido v. Bruni, 341 O. G. 837. Compare Urquhart v. Paschke, 69 Fed. (2) at 539.

“The contention that the caveat establishes invention because in some cases invention may be established by drawings and verbal descriptions fails to recognize the distinction between inventions dependent upon familiar facts or familiar mechanical principles, and an experimental invention based on the discovery of new facts. A drawing or words may or may not prove complete invention, according to the subject matter. If common persons guided by common knowledge, or experts or scientific men guided by scientific knowledge, can say, upon reading text or examining a drawing, ‘This will necessarily work. It accords with what is known,’—then there may be a reduction to practice by a drawing or by a verbal description. If, upon reading a document or studying a drawing, scientific men or experts would say, ‘All that is known tends to show that this is an impossibility, or there is nothing in common experience or in expert or scientific knowledge which justifies this statement without experiment’ . . . there surely is not patentable invention in the bare writing down of the project. It is

bare hypothesis." *American Bell Tel. Co. v. National Tel. Mfg. Co.*, 109 Fed. at 1026, 1027.

"A reduction to practice is accomplished when the inventor's conception is embodied in such form as to render it capable of practical and successful use. The end sought in the instant case was the production of foam, and the testimony . . . amply discloses that this was done by a method within the count in issue." *Pyrene Minimax Corp. v. Palmer*, 32 U. S. P. Q. 277.

"We are in accord with the views expressed by the Examiner of Interferences that the witnesses who were present and participated in the tests in the studio, intended to be understood as saying that from the results produced by the tests made there, the method of using superimposed film strips, was not a commercial success in the production of motion pictures. . . . It was incumbent upon appellant to establish that appellee's method . . . would not actually perform the functions. . . . Proof that it is imperfect in operation . . . that it does not meet commercial requirements, is not sufficient to establish inoperativeness in a patentable sense." *Williams v. Handschiegl*, 9, U. S. P. Q. 188.

"Taylor may have started later in his experiments towards the invention than either Reed or Reed and Hoxie did, but he arrived first at the goal, and first made the completed successful invention, and followed it up by his patent. . . . He must be held to be the first inventor." *Taylor v. Archer*, 4 Fish. 449.

"The invention involves an apparatus for the welding or cutting of materials. It is clear that such a device, in order to constitute a reduction to practice of the invention, must be tested to demonstrate that the apparatus will accomplish the purpose intended. Careful examination of the testimony discloses that there is no evidence as to what the material was that was claimed to have been welded in 1924, and there is no evidence that a useful weld

was accomplished." *Hammers v. Bethenod*, 16 U. S. P. Q. 37.

"The real problem confronting appellee was to put the active extractives of codliver oil into the form of a dry medicinal agent. Having conceived this idea and having actually produced codliver oil tablets, it was not necessary that any given number of tablets contain a particular quantity of active extracted ingredients . . . Nor was it necessary that appellee exploit his invention in order to complete it." *Larson v. Eicher*, 9 U. S. P. Q. 463.

"While the experiments demonstrated the correctness of his theory, they did not amount to an actual reduction to practice, because the same amounts of sugar and yeast were used in the batch for the control loaf, which contained no taka-diastase, and the other batches containing various amounts of taka-diastase. . . . Letters . . . indicate that the experiments with taka-panis were not successful and that those with taka-diastase were discontinued . . . as it was believed the cost . . . prohibited its use. . . . These letters . . . merely indicate the desire of introducing Takamine products into the bread-making art at the time they were written. Such desire, unaccompanied by successful tests, does not constitute even a conception of the invention." *Takamine v. Kohlman*, 321 O. G. 953.

"It is true that Setzler in 1913 had not a commercial device and was not willing to use his process commercially. It does appear, however, that he had apparatus which operated satisfactorily a short period in such a way to indicate to him that the process was commercially practicable provided he could procure apparatus to carry it out, which would be surely durable to last long enough to be commercially economical. He seems to have been fairly constant and diligent in his efforts to procure a proper bearing . . . to make his process commercially useful. As soon as such a bearing was procured he did



go into commercial operations.” *Prichard v. Setzler*, 321 O. G. 706.

“It appears that while merchantable glass was made from the start that part of the product was unmerchantable. The manufacture, however, was continued, and after much effort and considerable time the difficulty was located. . . . Such difficulty proved to be not the fault of the process or the apparatus devised to practice it, but lay wholly in the preparation and use of molten glass of dissimilar character for both upper and lower layers. . . . There is no abandonment.” *Appert v. Brownsville Plate Glass Co.*, 144 Fed. at 120.

“The . . . method or process . . . consists exclusively of (1) heating the designated kind of oil (2) in the presence of dry aluminum chloride (3) to a stated temperature (4) for a stated period of time, and (5) agitating as indicated. . . . That description does not indicate that the use or application of any test is a part of the method or process in question. . . . The decision of the case cannot properly be made to turn upon the question of priority in disclosing a means of testing oil subjected to the process mentioned.” *Texas Co. v. McAfee*, 299 Fed. at 722.

“A few experimental lamps were made according to the disclosure in this specification, and . . . 60% of them were good lamps. At the time the testimony was taken, wire made according to the specification of this patent was used in making a considerable number of lamps, almost all of which were perfect. . . . ‘Experimentation is no ground for holding a patent invalid.’” *Eldred v. Fink and Yunc*, 279 Fed. at 192.

“At that meeting Dr. Kratz read an essay prepared by himself. . . . We do not believe that anyone regarded D. P. G. as a seriously preferable accelerator until after the Kratz paper, because that chemist was . . . the first to give comparative figures demonstrating the great saving of time following the use of D. P. G. . . . Kratz gave

the crucial information as to time saving. . . . Dr. Kratz and his associates . . . were the inventors . . . and not Weiss." *Dovan Chemical Corp. v. National Aniline and Chemical Co.*, 292 Fed. at 558, 559.

"It was not necessary to a reduction to practice that Silverman should have thought of all the uses to which the composition could be put and have actually employed it practically for those uses, but merely that he should have tested it to determine its qualities, so as to demonstrate its practical utility for some purposes. Silverman himself did not regard what he did as a reduction to practice, for he continually refers to it as an experiment." *Silverman v. Hendrickson*, 99 O. G. 445.

"The product obtained in the last test was used to interest capital for the practical application of this process. It is admitted by Whitman that this apparatus was not of a character which would be suited to a commercial exploitation of the invention. It is, however, immaterial whether or not this apparatus is the best available for producing the result if the process was successfully performed. . . . This experiment constituted a reduction to practice." *Whitman v. King*, 160 O. G. 259.

"Where the invention is a process . . . the process must be performed in order to make actual reduction to practice. . . . The earliest actual reduction of the process to practice was . . . when he actually made articles of glassware in accordance with it." *Croskey v. Atterbury*, 76 O. G. 163.

"The invention has been referred to as a 'thing compact of glass and metal.' . . . This definition, although correct as far as it goes, is inadequate, because it applies equally well to the prior art devices, and . . . to this definition should be added the qualification that the device 'operates with a pure electronic discharge above the voltage of positive ionization and below saturation.' . . . The question to be determined was, 'Who of the parties

first knowingly conceived and produced such a tube.' ”  
*Langmuir v. Arnold*, 6 Fed. (2) at 705.

“ ‘It may be presumed that Shilstone was familiar with the digestion of carbon with an alkali. . . . Shilstone, knowing this, actually regarded the steps in advance of the art to consist in the selection of the particular material, or rice fiber carbon. The material was new, but the way to treat it was old, in connection with the treatment of other vegetable carbons.’ . . . Given the Shilstone carbon, one skilled in the art would have had no difficulty, after reading the Shilstone affidavit, in producing a decolorizing agent. It may be that to perfect it to the point since reached would have required some experimentation, but that does not alter the fact that the invention . . . had been disclosed [in the affidavit].’ ”  
*Taggart v. Shilstone*, 3 Fed. (2) at 96.

“A patentable invention is a mental result. It must be new and shown to be of practical utility. Everything within the domain of the conception belongs to him who conceived it. The machine, process or product is but its material reflex and embodiment.” *Smith v. Nichols*, 21 Wall. at 118.

“In Rob. Pat. Par. 381, referring to inventions which are the result of experiment, it is said: ‘The production of new means by this method is . . . an inventive act, but at no instant before the experiment succeeds can it be said that the conception of the invention exists in the inventor’s mind. Until that instant, it is mere speculation; at most a probable deduction from facts already known; and the same act which reduces it to practice gives to the conception its definite and final form.’ ” *American Bell Tel. Co. v. National Tel. Mfg. Co.*, 109 Fed. at 1029.

“Russell at this time had practically solved the problem presented . . . his discovery, demonstrations, and prescribed process present a meritorious and useful invention; and . . . Winzel’s unpublished and unknown discoveries in Austria should not deprive him of his own

independent and original discovery and experiments in this country. . . . The only question is whether he had gone far enough to entitle him to protection at the time he acquired knowledge of what Wenzel was doing. . . . The patent is valid." *American Sulphite Pulp Co. v. Howland Falls Pulp Co.*, 80 Fed. at 402, 404, 410.

"Its proportions were . . . the result to which the experiments were directed. Somewhere in their progress lay a conception of the thing achieved. If the thing is otherwise a patentable invention it does not fail for lack of a definite point at which the conception appeared." *Pittsburgh Iron and S. F. Co. v. Seaman-Sleeth Co.*, 248 Fed. at 708.

"It may be doubted . . . whether Hyatt himself had any intelligent conception of the real nature of his improvements. . . . It is not open to fair doubt that what he described was an improvement upon prior methods, and involved invention." *Schwarzwalder v. New York Filter Co.*, 66 Fed. at 157.

"It is urged . . . that there is nothing . . . to show that Webster conceived the idea of applying the process to ores which contained sulphides as well as nonsulphides. . . . We are not impressed with this contention, since . . . the process was invented by Webster to solve the problem of treating ores from Bullwhacker Mine, at Butte, Mont., and that this ore, while predominantly oxide, contained sulphide copper." *Dosenbach v. Webster*, 278 Fed. at 398.

### III. Of Constructive Reduction to Practice

"There is nothing inconsistent in the rulings in the decisions cited holding that a process and apparatus are distinct inventions or in the fact that they may not be generally the same invention and holding . . . that an earlier application disclosing both may be regarded as a constructive reduction to practice of the invention of

either disclosed in a subsequent copending application.” *McNeil v. Molyneaux*, 282 O. G. 385.

“On April 30, 1919, appellant, Conover, filed an application, which matured into a patent on December 9, 1919, claiming and disclosing an apparatus which would perform the process in issue . . . On July 13, 1921, appellant filed an application for reissue of his patent, in which he made claims for the process. . . . The primary Examiner held that appellant could not claim the process in a re-issue application. Thereafter, on November 28, 1931, appellant filed an independent application for the process. . . . He . . . was not entitled to a constructive reduction to practice by virtue of the filing . . . on April 30, 1919, as that application was for a different invention. . . . There was nothing pending in the Patent Office to which his later application could relate.” *Conover v. Downs*, 3 U. S. P. Q. 58, 59.

“Where an invention is described in a specification, and a patent for such invention is applied for, the filing of such application is equivalent to a reduction to practice. In reason this should be so, for since the statute requires, not only that such applicant disclose his invention, but also ‘the best mode in which he has contemplated applying that principle.’ . . . It follows that, if the applicant receives a patent, its ‘issue’ implies a reduction to practice when the application was filed.” *Pittsburgh Water Heater Co. v. Beler Water Heater Co.*, 228 Fed. at 678.

“It is further settled . . . he reduces his invention to practice when he files with the Patent Office an application containing specifications so careful, exact, and complete that a man skilled in the art can . . . produce a machine which will meet the description and produce the results which the application asserts.” *Sundh Electric Co. v. Interborough Rapid Transit Co.*, 198 Fed. at 97. See also *Steimning v. Davidson*, 1 F. Supp. 487.



“It would certainly seem that any one skilled in the art, who undertook to use Vreeland’s apparatus and found that it would not operate if set up exactly as shown in his application, would at once be led to place a stop-ping condenser in the circuit in order that the battery might not be short circuited. . . . Nor has it been established that it would not have been well within the skill of the art at that time to so set up the apparatus.” *Lee and Hogan v. Vreeland*, 336 O. G. 754.

“It is apparent that the gist of the invention resides in the tire and a process of making it. . . . It further appears that . . . filed an application on tire machines, upon which patent . . . was granted . . . and that this patent discloses the process in issue here. It thus conclusively appears that Goodyear Company was in possession of the invention.” *Kremer v. Harsel*, 288 Fed. at 267, 268.

“Much has been said about the efficacy of the filing of the apparatus case May 10, 1925, as a constructive reduction to practice for the process of the issue. There is no doubt but that the invention was disclosed in May 10, 1925, case and that it might have been claimed therein. This being so, there is no doubt but that the May 10, 1925, case is a constructive reduction to practice.” *Bethke v. Scannell*, 273 O. G. 185.

“Speidel obtained a patent for a process relative to the subject. . . . While this application was pending he presented certain amendments. . . . The invention was disclosed by Speidel when he tendered the amendments to his original application which we have referred to above. . . . Speidel is entitled to prevail if he was diligent between the dates of his disclosure and the filing of his present application.” *Hauschild v. Speidel*, 261 O. G. 803.

“This court sometime ago said ‘If a corporation (incapable of being an applicant for a patent) should employ a score of experts in its laboratories to improve the processes and the products of the corporation, it should

be of no concern even to the government . . . to prosecute an inquiry and make a specific finding on the question whether the invention was single or joint and just what part each expert took in perfecting the improvements; and surely a stranger, who is taking advantage of the disclosures in the patent, ought not to escape on the contention that the government made a proper grant but erroneously or wrongfully recognized the wrong person as applicant.' (Bestwall Mfg. Co. v. United States Gypsum Co., 290 F. 798.) In conflict with this statement of the law see, *United Chromium, Inc. v. General Motors Corporation, et al.*, 85 Fed. (2) 577." *Colgate-Palmolive-Peet Co. v. Lever Brothers Co.*, 33 U. S. P. Q. 303.

"The patents in suit upon fair reading, plainly go back to their respective British predecessors, not always wholly to one in particular, but to one or more of them . . . The patents in suit . . . have the same security against successful attack which is based upon any prior patents or publications." *City of Milwaukee v. Activated*, 21 U. S. P. Q. 80.

"When the German Patent Office accepted the amendment of September 9, 1916, it was incorporated in and became part of the application. . . . Wohl was entitled to a date at least as early as the date of filing his amendments in the German Patent Office for his date of conception and reduction to practice. . . . We do not regard it as important . . . whether the matter inserted by amendment was or was not new matter . . . sufficient to say that the amendments were . . . eventually included in the patent." *Gibbs v. Wohl*, 20 U. S. P. Q. 34, 35.

"The claims have been rejected on the ground that the application is insufficient to form a basis for a patent since the applicant has admitted on the record that he can furnish no evidence of reduction to practice of the subject matter of the application. It is not necessary for an applicant to secure an actual reduction to practice before he obtains a patent." *Fox*, 2 U. S. P. Q. 361.

#### IV. Of Joint Inventors and Employees

“Vreeland had been a capable assistant for two weeks . . . experimenting . . . under the direction of Fessenden . . . Fessenden suggested . . . Vreeland . . . operated the invention.” *National Electric S. Co. v. DeForest Wireless Tel. Co.*, 140 Fed. at 453.

“Neither is it considered that Takamine’s request to the Mellon Institute to experiment with his cheaper products, introduced in evidence as ‘Takamine Exhibit No. 5,’ places Kohlman in the position of not being an original inventor. The parties did not occupy the relation of employer and employee, and Takamine did not disclose the invention in issue to Kohlman at this time.” *Takamine v. Kohlman*, 321 O. G. 953.

“It was the rejection of Moffat’s tin-plating and the substitution of King’s plastic tin-plating that produced the file here involved. . . . King suggested this later process . . . his testimony is that the whole suggestion of using tin . . . came from him. . . . We are of opinion that Moffat was not the sole inventor.” *Joseph Ross and Co. v. Wigder*, 290 Fed. at 790.

“Where a person has discovered a new and useful principle in a machine, manufacture or composition of matter, he may employ other persons to assist in carrying out that principle, and if they, in the course of experiments arising from that employment, make discoveries ancillary to the plain and preconceived design of the employer, such suggested improvements are in general to be regarded as the property of the party who discovered the original principle, and they may be embodied in his patent as part of his invention. . . . But persons employed as much as employers are entitled to their own independent inventions, and if the suggestions communicated constitute the whole substance of the improvement the rule is otherwise, and the patent, if granted to the employer, is invalid, because the real invention or dis-

covery belongs to the person who made the suggestions.”  
*Union Paper Collar v. Van Deusen*, 23 Wall. at 563, 564.

“Pembroke was told in very general terms that a carbon paper was desired possessing some, but not all, of the properties mentioned in the claims of the interference. We fully agree . . . that nothing more was disclosed to Pembroke by Sulzer’s agent, Haste, than a result to be accomplished, and that Pembroke is the real inventor of the subject-matter of the claims.” *Pembroke v. Sulzer*, 265 Fed. at 998.

“In order to constitute two persons joint inventors . . . the conception of the entire device may be due to one, but if the other makes suggestions of practical value, which assisted in working out the main idea and making it operative, or contributes an independent part of the entire invention, which is united with the parts produced by the other and creates the whole, he is a joint inventor.” *De Laski and Thropp C. W. T. Co. v. W. R. Thropp and Sons Co.*, 218 Fed. at 464.

“The patent contains two claims. The first . . . is of a single thought . . . consisting in coating the complete mantle with paraffine. . . . It is difficult to apprehend how two could have shared in the conception. The second claim . . . is distinctly different. It is for a method . . . consisting of a number of steps, the combining of which . . . may well have been the joint achievement of two.” *Welsbach Light Co. v. Cosmopolitan Incan. Light Co.*, 104 Fed. at 86.

## CHAPTER 5

### THE NATURE OF A PATENTABLE PROCESS

The Patent Statute does not enumerate “processes” among the subjects of patentable invention. It says that, upon certain conditions, any person may obtain a patent who “has invented or discovered any new and useful art, machine, manufacture, or composition of matter, or any new and useful improvement thereof.” Whether a process is patentable or not depends, therefore, upon whether it is an “art” within the meaning of the Patent Statute.

#### WHAT THE COURTS HAVE SAID

##### I. Some Definitions

“A process *eo nomine*, is not made the subject of a patent in our Act of Congress. It is included under the general term ‘useful art.’ . . . But where the result or effect is produced by chemical action, by the operation or application of some element or power of nature, or of one substance to another, such modes, methods, or operations, are called processes. A new process is usually the result of discovery; a machine of invention. . . . One may discover a new and useful improvement in the process of tanning, dyeing, etc., irrespective of any particular form of machinery or mechanical device. And another may invent a labor-saving machine by which this operation or process may be performed, and each may be entitled to his patent. . . . It is for the discovery or invention of some practicable method or means of producing a beneficial result or effect, that a patent is granted, and not for the result or effect itself. It is when the term ‘process’ is used to represent the means or method of producing a



result, that it is patentable, and it will include all methods or means which are not effected by mechanism or mechanical combinations." *Corning v. Burden*, 15 How. at 267, 268.

"An invention or discovery of a process or method involving mechanical operations, and producing a new and useful result, may . . . entitle the inventor to a patent for his discovery." *Expanded Metal Co. v. Bradford*, 214 U. S. at 385, 386.

"Inasmuch as the process operates on material to convert it to a different state . . . and is not absolutely dependent upon the operation of the machine, it cannot be properly rejected on the ground that it is the mere function of a machine." *Ex parte Merrill*, 27 U. S. P. Q. 459.

"It cannot be doubted that Carrier discloses and claims a connected series of steps or operations for accomplishing a physical result, and this is often a fair definition of what is protected by a good process patent." *Buffalo Forge Co. v. City of Buffalo*, 255 Fed. at 86.

"A process is a mode of treatment of certain materials to produce a given result. It is an act, or a series of acts, performed upon the subject matter to be transformed and reduced to a different state or thing." *Cochrane v. Deener*, 94 U. S. at 788.

"A process is an act or mode of acting. . . . The mixing of certain substances together, or the heating of a substance to a certain temperature is a process." *Tilghman v. Proctor*, 102 U. S. at 728.

"Acts . . . are the life steps in a process patent." *Smith Engineering Wks. v. Nordberg Mfg. Co.*, 68 F. 2nd, 494.

"In each case where it is found that a pickling bath containing the particular proposed reagent is not anticipated by the prior art directly or by any test of equivalency and the Examiner is of the opinion that it can be allowed as a new pickling bath, we believe it is equally true

that a new process is involved in applying it." Chamberlain, 413 O. G. 1101.

"The invention consists in the subjection of a specific object to the influence of a specific force through specific mode of application. That is a true process or art." American Chemical Paint Co. v. C. R. Wilson Body Co., 298 Fed. at 311.

"Neither a process of nature nor the discovery thereof is patentable. Man-made statutes permit to be protected or monopolized only some perceptible means or certain method of harnessing or utilizing forces, however mysterious, uncertain, or perhaps incomprehensible. The only question in this case is whether some known operations of nature were, by proved, tangible, and visible implements, harnessed and made useful; if so, he who did it may be protected in what he did in accordance with statute laws." Marconi Wireless T. Co. v. DeForest Radio T. and T. Co., 243 Fed. at 562.

"In chemistry, especially when the art has been striking at the mark, the first to hit does not usually do so by chance. All those engaged in such experiments are highly trained men, not ordinary routineers. A new and successful discovery is most unlikely to be the result of no more than everyday ingenuity." International Vitamin Corp. v. E. R. Squibb & Sons, 17 U. S. P. Q. 418.

"The situation is here reversed; instead of stopping a known process to get a new result, Flaherty extended one. That his limit is not absolute is no objection; though at first hazy as to the precise boundaries, he had always fixed a safe upper limit, and that was enough." E. I. Du Pont de Nemours & Co. v. Glidden Co., 67 Fed. (2) 397.

"There is an obvious difference between a mechanical patent or process and a chemical or quasi-chemical one. In the former every step can be seen in the apparatus or method used by the defendant; this is not equally true of

the latter kind.” *Claude Neon Lights v. E. Machlett and Son*, 31 Fed. (2) 986.

“The process . . . appears to comprise . . . nothing more than the advertising of or giving publicity, to offers of purchase or sale by one party, the acceptance thereof by another, and the making of a record of the transaction followed by a withdrawal of the offer. . . . Novelty is lacking.” *Wait*, 24 U. S. P. Q. 89.

“In purely mechanical methods it is clear that the same series of steps generally produce the same result or results that do not vary, greatly from those expected, while in processes involving chemical action the result is not apparent beforehand, except in limited classes of cases which follow some uniform and recognized rule of action.” *Chamberlain*, 413 O. G. 1101; 2 U. S. P. Q. 146.

“The positive steps actually included in Claim 1, are

1. Admitting a charge of air to an enclosing chamber.
2. Injecting a charge of fuel into said charge of air.
3. Compressing the mixture.
4. Conducting the compressed mixture into the working chamber of an engine and displacing a previously burned charge thereby.
5. Permitting the mixture to expand in the working chamber.
6. Recompressing the mixture in the working chamber.
7. Igniting the charge. . . .

There are several references in the claims, though indirect, to the hollow piston. . . . We believe a true method claim is involved in this detail of thus first drawing a charge of air into the hollow piston. . . . The appealed claims set forth a method. . . . Warrant their allowance as proper method claims.” *Hosford et al*, 2 U. S. P. Q. 350, 351.

“The method or art . . . is patentable as a process. . . . It is the performing of a series of acts upon the beer in the krausen stage, producing new and useful results

in the art of making marketable beer.” *New Process Fermentation Co. v. Maus*, 122 U. S. at 427, 428.

“The use of heat in applying a filler, and that alone . . . makes it patentable. It is the disclosure of ‘a mode of treatment of certain materials to produce a certain result,’ and as such quite independently of the mechanism necessary to practice or carry it out.” *North American Chemical Co. v. Dexter*, 252 Fed. at 168.

“A process is patentable provided that it is new and useful. By ‘process’ is meant the application or operation of some element or power of nature, or of one subject to another . . . the merit of the invention consists . . . in the application of old and well-known principles to new and useful purposes . . . to secure a useful result not previously attained is patentable.” *Boyd v. Cherry*, 50 Fed. at 282.

“Operations consisting partly or wholly in the employment of heat, light, electricity or some other force producing chemical change, are subject to patents. Operations which consist entirely of mechanical transactions and which are only the peculiar functions of machines, are not patentable. Operations which consist entirely of mechanical transactions, but which may be performed by hand or by any of the several different mechanisms or machines are patentable.” *Vapor Car Heating Co. v. Gold Car Heating and Lighting Co.*, 7 Fed. (2) at 288, citing *Risdon Iron and Locomotive Wks. v. Medart*, 158 U. S. at 68.

“To support a method or process patent there must be a tangible product or change in character or quality brought about, and not simply a principle or result underlying or involved in certain mechanical, or, as here, electrical, means or steps.” *Manhattan General Const. Co. v. Helios-Upton Co.*, 135 Fed. at 788.

“The manufacturing and the assembling of this ball-bearing device by eccentric displacement is entirely new, as no other ball bearing has ever been made which could

be entirely assembled in this way, resulting in making practical a continuous and uninterrupted raceway. The idea is novel and of great utility involving invention." *Hess-Bright Mfg. Co. v. Standard Roller-Bearing Co.*, 177 Fed. 438.

"If the method of a claim can be performed by any other apparatus than that of the applicant, or if it can be performed by hand, it cannot be said that the claim recites the mere function of the apparatus so as to make its allowance double patenting. . . . The Patent Office or the Courts are not required to weigh or consider the merits of the practical and commercial possibilities." *Parker*, 462 O. G. 6; 79 Fed. (2) 908; see also *McKee*, 462 O. G. 253; 79 Fed. (2) 905.

"In this case a floor results from the laying of tiles under pressure. . . . The method of creating such a floor from such elements is surely a patentable process." *David E. Kennedy, Inc. v. Beaver Tile & S. Co.*, 232 Fed. at 478.

"The molding of plastics, such as paper pulp and molten metal, is not analogous to the art of making articles of clothing out of woven textiles. The materials worked upon in the two arts have widely different characteristics. It would not be reasonable to expect anyone to utilize the principles of the plastic molding art for the manufacture of articles from woven textile fabrics. . . . Woven textile material has never been considered a plastic. Such textiles are not fluid under heat and pressure. . . . Clearly, it was invention to conceive that a woven material having stitched folded edges could have those edges molded or shaped in a die under the application of heat and pressure to the surfaces." *Beattie Manufacturing Co. v. Tutelman-Kohn-Marcus, Inc.*, 33 U. S. P. Q. 186.

"The method consists of a person listening to the speaker whose utterances it is desired to record and repeating them by spoken word into a dictaphone from which they can be transcribed into writing in the usual



way. . . . Neither the power to hear nor the power to repeat what one hears are of themselves patentable, at this period of human development, and we do not think a method of combining these faculties for the purposes described in the application comes within the purview of the patent statute." Holmes, 4 U. S. P. Q. 179.

"To validate this claim would give this plaintiff a monopoly on the mere application of a testing device to electric insulators, a result not contemplated by the patent laws." Johnson v. Duquesne Light Co., 29 Fed. (2) 786.

"A method of computation for determining the position and weights necessary to counterbalance distortion in a Sharp shaft . . . is not 'a new and useful art, machine, manufacture or composition of matter' within the meaning of section 4886, Rev. Stat." Don Lee, Inc. v. Walker, 61 F. 2nd, 67.

"The claims on appeal are drawn to a method of heating liquids . . . if allowed will issue in the same patent as the apparatus claims . . . Appellant provides a plurality of streams of liquid which are discharged in the form of spray and an essential step of his method consists in varying the number of streams. . . . These claims should be allowed with the apparatus claims." Ehrhart, 2 U. S. P. Q. 344, 345.

"In many aspects a claim to a 'system' is directly analogous to a method claim . . . Method patents relate to modes of acting and not to the tools with which the work is done." Kodel E. and Mfg. Co. v. Warren T. Clock Co., 62 Fed. (2) 694.

"The claims on appeal are directed to a method of shrinking living tissue. . . . Because of the fact that completion of the process is not immediate and is dependent upon the operation of natural forces and laws it is the examiner's view that it is not patentable. . . . The claims satisfy the classic definition of a process." Wappler, 26 U. S. P. Q. 191, 192.

“It was the object of complainant’s art or process to cover the molding or other form of wood metal by one machine, and without having any portion of the covered molding reduced in size so as to unfit it for use. There was, therefore, in the new method a saving of time and material which is the proper subject for a patent.” *San Francisco Cornice Co. v. Beyrle*, 195 Fed. at 519.

“Cameron was the first one to subject a flowing current of sewage to the action of anaerobes and aerobes under conditions which. . . . This certainly involved ‘the use of one of the agencies of nature for a practical purpose.’ . . . The process is one which puts a force of nature into a certain specified condition and then uses it in that condition for a practical purpose.” *Cameron Septic Tank Co. v. Village of Saratoga Springs*, 159 Fed. at 462, 463.

“The process starts by simply printing the text in black type upon a diaphanous paper. This paper is pressed against sensitized photographic print paper, which is then exposed to the light, precisely as in the case of the ordinary ‘blue print’ or ‘brown print.’ After . . . development. . . . This is then used as the object to be photographed as a moving picture. . . . The method is concededly more economical and speedier. . . . I uphold it.” *Lane v. Craftsmen Film Laboratories, Inc.*, 7 Fed. (2) 288, 290.

“In this art—or, what is the same thing under the patent law, this process, this way of transmitting speech—electricity, one of the forces of nature, is employed; but, electricity, left to itself, will not do what is wanted. The art consists in so controlling the force as to make it accomplish the purpose. . . . He then devised a way in which these changes of intensity could be made and speech actually transmitted. Thus his art was put in a condition for practical use. In doing this, both discovery and invention, in the popular sense of those terms, were involved; discovery in finding the art, and invention in devising the means of making it useful. . . . Other in-

ventors may compete with him for the ways of giving effect to the discovery, but the new art he has found will belong to him and those claiming under him during the life of his patent. . . . An art—a process—which is useful is as much the subject of a patent, as a machine, manufacture, or composition of matter.” Telephone Cases, 126 U. S. at 533.

## II. Never a Mere Function

“Although the cases are not numerous, this distinction between process and function has never been departed from by this court, and has been accepted and applied in a large number of cases in the circuit courts. The following processes have been held not to be patentable: An improvement in sewing machines, by which the soles and uppers of boots and shoes could be sewed together without any welt by a certain kind of stitches, *McKay v. Jackman*, 12 Fed. 615. A process for washing shavings in breweries, *Brainard v. Cramme*, 12 Fed. 621. For an improved method of treating seed by steam, *Gage v. Kellogg*, 23 Fed. 891. A process for crimping heel stiffenings of boots and shoes, *Hatch v. Moffit*, 15 Fed. 253. See also *Sickels v. Falls Co.*, 4 Blatchf. 508; *Excelsior Needle Co. v. Union Needle Co.* 32 Fed. 221. The patent in question clearly falls within this category. . . . All that he invented in fact was a machine for the more perfect manufacture of such pulleys. The operation or function of such machine, however is not patentable as a process.” *Risdon Iron and Locomotive Wks. v. Medart*, 158 U. S. at 79. See also *McCurdy*, 459 O. G. 923.

“Inasmuch as the process operates on material to convert it to a different state and thus satisfies the classic definition handed down in *Cochran v. Deener*, 94 U. S., 780, and is not absolutely dependent upon the operation of the machine, it cannot properly be rejected on the ground that it is the mere function of a machine.” *Merrill*, 27 U. S. P. Q. 459.

"Insofar as the language above quoted implies that a valid method claim requires that it relate to the treatment of some material, we are not in accord therewith. . . . It is our view that the claims here involved are not allowable for the reason that they involve no more than the mere function of a machine for which claims have been allowed to appellants." *Ernst*, 22 U. S. P. Q. 29, 31.

"The function which a machine performs, here the hatching of eggs, is to be distinguished from the means by which that performance is secured. . . . By the use of materials in a particular manner he secured the performance of the function by a means which had never occurred in nature and which had not been anticipated by the prior art. This is a patentable method or process." *Waxham v. Smith*, 24 U. S. P. Q. 34.

"The 'process' of the second patent is nothing other than using the machine of the first. . . . The second patent in suit must be defeated." *C. B. Cottrell and Sons Co. v. Claybourn Process Corp.*, 17 Fed. (2) 290.

"The process of lowering the cylinder block and causing it to vibrate as the pistons were inserted in the cylinders is old. Under the alleged novel process the pistons are held in place by clamps; formerly they were held in place by workmen. So, it seems to us, the claimed process is old, and the new and beneficial results are obtained by the means, and not by the process employed." *Gill*, 3 U. S. P. Q. 335.

"A process may be independent of the instruments employed or designed to perform it. They may be independent or they may be related." *Fireball G. T. and I. Co. v. Commercial Acetylene Co.*, 239 U. S. at 163. See also *Naivette v. Berkinger*, 61 Fed. (2) 433 and *Chris-holm-Ryder Co. v. Buck*, 1 Fed. Supp. at 275.

"It being conceded that a process is not patentable which is merely the effect or function of specific mechanism, the question necessarily arises in every case whether the process claimed is of that character—that

is, whether it is capable of being performed by a machine differently organized from that described, or even without an organized machine, by ordinary tools, or by hand. If it is capable of being so performed, then . . . it may be a patentable process." *Ex parte Kerr*, 53 O. G. 919, quoting *Ex parte Young*, 46 O. G. 1635.

"The subject matter of the method is that of controlling the application of brakes upon long railway trains. . . . While an apparatus has been illustrated by which it may be executed . . . it is not dependent upon one and only one apparatus or equivalent thereof, but may be performed . . . by manual control of valves if properly arranged. . . . We regard it as allowable as a mechanical method." *Campbell*, 28 U. S. P. Q. 116.

"A method, which may be patented irrespective of the particular form of the mechanism which may be availed of for carrying it into operation, is not to be regarded as functional, merely because the specifications show a machine capable of using it." *Waxham v. Smith*, 294 U. S. 22, quoted and followed *Maytag Co. v. Brooklyn Edison Co.*, 26 U. S. P. Q. 273.

"The evidence shows that the actual process claimed by Conner is now performed in different shops by the use of several different kinds of machines and tools. It is therefore a true process, as distinguished from the mere result of working a particular apparatus." *One-Piece Bifocal Lens Co. v. Bisight Co.*, 246 Fed. at 460.

"Processes, which are to be effected wholly by mechanical means, in order to be patentable must be capable of being distinguished from the method of operation or mere function of the mechanism necessary for their accomplishment. Whether or not such processes are possible is a question primarily for inventors." *Appleton Mfg. Co. v. Star Mfg. Co.*, 60 Fed. at 415.

"The mere use of the word 'method' does not prove discovery of a new process." *Lovell-McConnell Mfg. Co. v. Automobile Supply M. Co.*, 212 Fed. at 204.



“A system of transacting business disconnected from the means for carrying out the system, is not, within the most liberal interpretation of the term, an art. Advice is not patentable.” *Hotel Security C. Co. v. Lorraine Co.*, 160 Fed. at 469.

“Kuch only discovered a previously unknown law of operation involved in a known method . . . while . . . the first to make completely intelligent use . . . he was not the first . . . to disclose that it could be used. . . . Such a discovery does not constitute a patentable invention.” *General Electric Co. v. Cooper Hewitt Electric Co.*, 249 Fed. at 71.

“The only step . . . which can be called a process, in making a stencil sheet under Dick’s process patent, is that the combination held to have been patented by Fuerth, and decided to have been invented by him, is put into the ordinary typewriting machine and printed there and taken out again. That, in my opinion, is not a process within the meaning of the patent law.” *A. B. Dick Co. v. Henry*, 160 Fed. at 692.

“It is for the effect produced by constructing and operating the plaintiff’s press. It could not be infringed by doing this. The language . . . and the . . . reference . . . require the claim to be read as one for the plaintiff’s method of operating his press. . . . The claim cannot be allowed.” *Dederick v. Cassell*, 9 Fed. at 311.

“Where the process is simply the function or operative effect of a machine, the above cases are conclusive against its patentability; but where it is one which, though ordinarily and most successfully performed by machinery, may also be performed by simple manipulation, such, for instance, as the folding of paper in a peculiar way for the manufacture of paper bags, or a new method of weaving a hammock, there are cases to the effect that such a process is patentable, though none of the powers of nature be invoked to aid in producing the result. *Eastern Paper-Bag Co. v. Standard Paper-Bag Co.*, 30 Fed. 63;

Union Paper-Bag Machine Co. v. Waterbury, 39 Fed. 389; Travers v. American Cordage Co., 64 Fed. 771. This case, however, does not call for an expression of our opinion upon this point . . . since there is no claim made for an independent process." *Westinghouse v. Boyden Power Brake Co.*, 170 U. S. at 557.

"Plaintiff's inventive concept is the simultaneous winding of a plurality of coils on a common core or spindle in combination with the insertion of insulating layers common to the entire series of helices." *Dudlo Mfg. Co. v. Varley Duplex Magnet Co.*, 253 Fed. at 747.

"Invention is clearly shown. It was not common knowledge . . . would not . . . have occurred to the ordinary shoemaker skilled in the art that he might make a felt shoe of this perfect shape in the manner described." *Daniel Green Felt Shoe Co. v. Dolgeville F. Shoe Co.*, 205 Fed. at 748.

"We see no merit in the claims for the method of canning beans by arranging them in bunch formation, with an encircling mold, then placing one end of the mold in contact with the open end of the can, causing the beans to move from the mold into the can. Such a process amounts to nothing more than the obviously necessary manner of operating the mechanism." *San Jose Canning Co. v. Oneal*, 10 Fed. (2) at 101.

"This process is the mere operation of the machine for holding liquid asphalt, retaining it in a liquid condition, and transporting it. . . . It is not a chemical process nor any other for transforming the subject of it into a different state. For this mere operation of the machine it does not seem that there can be a patent in addition to a patent on the machine." *New v. Warren*, 22 O. G. 587.

### III. Patentability Proved by Result

"The 'fiber is restrained from passing through' the screen and is 'fed out at the end of the separator.' The

means, method, or process constitutes a patentable process, consisting, as it does, of a series of treatments of a peculiarly obstinate material, each treatment having relation to the character of the material acted upon and to the condition produced by the preceding treatment. The result is the separation of the material into its two distinct constituents, the bran being substantially free from fiber and the fiber practically free from bran." *Johnson v. Foos Mfg. Co.*, 141 Fed. at 84.

"By wondering we express in a way the quality of the invention." *U. S. v. Société Anonyme Des Anciens*, 224 U. S. 323.

"As against invention it is contended that the change was slight; that it was merely the substitution in a high tower of a steam countercurrent, instead of an air or gas countercurrent. Physically, that is the fact; but, when the results are looked at which this simple change has brought about in its art, we put behind the word 'slight', and find fitting expression in such words as 'unlooked for', 'revolutionary', and the like." *Southern Electro-Chemical Co. v. E. I. DuPont de Nemours & Co.*, 20 Fed. (2) 99.

"It is very evident that the manufacturing and the assembling of this ball-bearing device by eccentric displacement is entirely new, as no other ball bearing has ever been made which could be entirely assembled in this way, resulting in making practical a continuous and uninterrupted raceway. The idea is novel and of great utility, involving invention." *Hess-Bright Mfg. Co. v. Standard Roller-Bearing Co.*, 177 Fed. at 438.

"It is plain that the patent originated in experiments which were intended only for the purpose of counterfeiting the spotted tobacco of commerce. . . . Congress did not intend to extend protection to those which confer no other benefit upon the public than the opportunity of profiting by deception and fraud. To warrant a patent,

the invention must be useful; that is capable of some beneficial use as distinguished from a pernicious use." *Rickard v. Du Bon*, 103 Fed. at 871, 873, but see *Black*, 12 U. S. P. Q. 206.

"The passing of the seed through the machine a number of times instead of once, and thereby procuring better results, may mean more careful and skillful workmanship and operation, but it does not involve the organization of a new device, or of such inventive skill, as would authorize a patent." *Ball v. Coker*, 210 Fed. at 280.

"The inhalation of the ethers had long been known. My increasing their quantity it was discovered that a new or more complete effect was produced, by which the subject was rendered wholly insensible. . . . A discovery may be brilliant and useful, and not patentable. . . . Neither the natural functions of an animal upon which or through which it may be designed to operate, nor any of the useful purposes to which it may be applied, can form any essential parts of the combination, however they may illustrate and establish its usefulness." *Morton v. New York Eye Infirmary*, 2 Fish. 320.

"An agitation greater than and different from that which had been resorted to before . . . and the resulting froth concentrate so different . . . make of it a patentable discovery." *Minerals Separation Ltd. v. Hyde*, 242 U. S. at 268, 269.

"A process may be patented . . . where a new and useful result is produced thereby it is patentable." *Byerly v. Cleveland Linseed Oil Wks.*, 31 Fed. at 74.

"It is not a fundamental invention, it did not revolutionize the art, but, by the substitution of an ordinary pinch-cock for heat in closing the connection between the lamp and the pump, it has accomplished a most useful and beneficial result with a corresponding economy of time, labor and material." *General Electric Co. v. Hill-Wright Electric Co.*, 174 Fed. at 998.

“His invention consists in the discovery that a stream of sand, driven with sufficient velocity to cause the grains of sand, through their own velocity and momentum, to act as projectiles against the article to be cut or dressed, will do the work effectively without any vehicle to carry the sand into contact with the article, and without any contact between anything and the article except the sand.” *Tilghman v. Morse*, 1 O. G. 574.

“What Faure discovered was the application of the active layer ‘to the supports [electrodes, plates, or grids] in the form of a paste, paint, or cement, prior to their immersion in the battery fluid,’ . . . Judge Coxe found that the invention was one of more than usual merit. . . . What Brush did was to immerse a plate coated with dry material . . . into the very fluid in which it was forthwith . . . put to use as a battery plate . . . Brush’s experiment did not anticipate Faure, who did discover the use of paste.” *Electrical Accumulator Co. v. New York and H. R. Co.*, 40 Fed. at 328, 329.

“It is contended that all Tesla had to do ‘after the issuance of his patent, No. 382, 279, in order to make his motor of that patent operate on the method of claim 1 of the patent in suit,’ was to pull one of its wires out of its binding post while the motor was running. . . . Notwithstanding its suggested obviousness, there is no evidence that the method of claim 1 of the patent in suit occurred to any one other than Tesla until after the patent was applied for.” *Westinghouse E. and Mfg. Co. v. Dayton Fan and Motor Co.*, 106 Fed. at 731.

“His act was not the selection of known agents in the art of bleaching flour, but was the discovery of the only agent that has yet been found to accomplish that result successfully in the milling industry. . . . ‘The mere selection of a material, and this, too, by a process of exclusion, has been deemed sufficient to sustain patentability.’ ” *Naylor v. Alsop Process Co.*, 168 Fed. at 919, quoting *Badische v. Kalle*, 94 Fed. at 163.



“This last step in the process of manufacture is new, and therefore impresses upon the whole method the character of novelty.” *Klein v. Park and Co.*, 13 O. G. 5.

“The use of slop in subsequent fermentation, clarified by deposition or filtration was old. . . . But this does not detract from the novelty of a process which proceeds upon the discovery that the fine solid particles of the slop which previously were lost are to be carefully saved, and protected for use again in fermentation. The process requires the operations of separations and cooling and subsequent use of the liquid to be carried out so as to utilize these particles. . . . The return of the saved particles for subsequent fermentation . . . impresses upon the whole process the character of the novelty.” *Frankfort Whisky Process Co. v. Mill Creek Distilling Co.*, 37 Fed. at 539, 540.

“The slightest changes which effect new improvement may be patentable. The test in such cases is whether the invention is patentable generally—that is, when considered, not with reference to any one thing in particular, but to every thing in general.” *Salt’s Textile Mfg. Co. v. Tingue Mfg. Co.*, 227 Fed. at 118.

“In so recondite a science as chemistry a difference in degree may produce revolutionary results.” *Corona Chemical Co. v. Latimer Chemical Co.*, 248 Fed. at 494.

“The modifications which they made in the process of manufacture were trivial, yet the fact still remains that their process was the first that was actually successful in the long attempt to make an article which should be both attractive and useful . . . patentability can hardly be doubted.” *Celluloid Mfg. Co. v. American Zylonite Co.*, 28 Fed. at 196.

“There is in the fish, to which his invention is applicable, . . . an inner skin, or sort of film, . . . the removal of this membrane is not necessarily effected by skinning the fish . . . the presence of this inner skin is highly injurious to the keeping quality of salt fish. . . .

After this discovery was made, it would probably occur to any one interested to apply it in the art of curing fish. . . . I see no reason why the person who improves the art of curing fish by removing a part of the animal not before known to be injurious, but in reality so, should not have a patent for it." *Crowell v. Harlow*, 1 Fed. at 141, 142. Compare *Doane*, 77 Fed. (2) 504 and *Pfister*, 77 Fed. (2) 508.

"But this was insufficient even to suggest the subsequent discovery,—which was not that halloysite may be thus dissolved and hydrate of alumina employed as a neutralizing agent, but a process whereby a high degree of heat is generated, the action of the sulphuric acid accelerated, and the decomposition and final result greatly improved,—mainly by the employment of other properties of the hydrate of alumina." *Damon and Bihn v. Eastwick*, 14 Fed. at 41, 42.

"The process simply consists in the concentric forcing together of the end of the tube to be closed by means of revolving squeezing discs, which, in conjunction with the other apparatus employed, narrow in upon it progressively, until, as it is claimed, a solid end or plug is formed. . . . The metal should be made not only to flow, but to fuse or unite . . . so as to form an integral, imperforate, and homogeneous mass. . . . Let a decree be drawn sustaining the patent." *Baker Lead Mfg. Co. v. National Lead Co.*, 135 Fed. 547, 548, 550.

"The patent in suit . . . describes a method for the purification of water by the simultaneous application of a specific coagulant and a process of filtration. . . . By this method the coagulants perform their principal work within the filter bed itself. By this change . . . the patentee not only dispensed with the use of settling tanks . . . but he also dispensed with the additional chemical treatment of the water and the use of the more complicated apparatus . . . and involved invention." *Schwarzwalder v. New York Filter Co.*, 66 Fed. at 157.

“The second claim is for the manufacture of lead-en-cased tin pipe from such ingot. . . . The word . . . is understood to have been used as a verbal noun, signifying the making such pipe from such ingots. . . . The statutes do not require inventions to be superior to or better than all other things known to be patentable. It is sufficient if they are useful in themselves, if they are also new. . . . None of the reasons set up . . . against . . . the patent . . . defeat it.” *Shaw v. Colwell Lead Co.*, 11 Fed. at 714, 715.

“Thomson . . . found a method for employing the electric current, localizing the heat at the point to be welded, and applying simultaneously the requisite pressure.” *Thomson Electric Welding Co. v. Two Rivers Mfg. Co.*, 63 Fed. at 122.

“The mechanism . . . old in form . . . was not old in function. It had not been applied to the swaging of wire, or of any substance capable of undergoing that operation. The manner in which the patentee applied the mechanism was, therefore, new; and so also was there a new result.” *Clinton Wire-Cloth Co. v. Wright and Colton Wire-Cloth Co.*, 65 Fed. at 426.

“The idea of the application of hot water or steam to a substance for the purpose of rendering it soft and pliable was undoubtedly old, yet . . . the idea of such application to bituminous rock in the course of preparation for roofing or paving purposes involved an element of invention from the fact that it was opposed to the generally accepted theory of the treatment of that substance, and the universal belief of those engaged in using the same, which was that the material must be kept waterproof, and must only be heated by dry heat, to the rigid exclusion of moisture, and that the presence of water or steam tended to its disintegration and destruction.” *Pacific Contracting Co. v. Bingham*, 62 Fed. at 283, following *Pacific Contracting Co. v. Southern California B. Pav.*

Co., 48 Fed. 300 and Walrath v. Pacific Pav. Co., 41 Fed. 883.

“Bevel-edged cards were not new at the date of the orator’s invention; neither was beveling in packs new; but arranging cards in oblique packs, and treating one side or end . . . as if they were one card, and treating the other side and ends successively in the same manner, does not appear . . . to have been known before. By this process the packs can be grooved or embossed and ornamented in a manner to present beveled designs upon the edges of such cards, which could not be produced by treating cards separately.” Hake v. Brown, 37 Fed. at 784.

“This is . . . after you have the compound boiled together and in the vacuum pan, substantially nothing more than carrying on its boiling process to a given point of evaporation, so as to pass the degree of bitterness and darker coloration, and yet not go so far as to reach crystallization. Does this require inventive genius?” Kane v. Huggins Cracker and Candy Co., 44 Fed. at 291.

“It is apparent that this is more than a process for annealing. That is included, it is true, but it is only a small part. It is applying foreign heat to a hot chilled wheel, at the point of time when it has reached a particular stage of cooling, by means of such foreign heat bringing the whole casting up to higher and uniform temperature, and maintaining an equable abatement of heat in a furnace or chamber under the control of the operator. . . . Nothing of the kind had ever been applied to cast iron railroad wheels. . . . Such . . . a process were needed for no other castings.” Mowry v. Whitney, 14 Wall. at 642.

“This old Dick patent is supposed to be relevant, because the specification suggests the protection of the coating of paraffin mixed with lard oil by a thin elastic varnish of nitro cellulose. . . . But the patent nowhere describes a stencil sheet with a single coating of cellulose compound, and the stencil sheet contemplated is the old wax-coated

sheet of Broderick somewhat softened by lard or lard oil and varnished with a thin film of nitrocellulose. Stencil sheets were made for years without overcoming the objections to a paraffin-coated sheet, and not until a coating of paraffin was abandoned did the difficulties disappear.”

A. B. Dick Co. v. Simplicator Corp., 34 Fed. (2) 938.

“The above process varies from the previously familiar practice, or . . . in that the stiffened blank is to be softened by heat, instead of by a solvent, and not by heat in general, but heat within a defined range of temperature; i.e., heat above that produced by the wearer’s body, but less than that which will injure leather. . . . By this . . . the drying . . . is dispensed with, and an advantage in time and cost of manufacture is secured.” Beekwith Box Toe Co. v. Gowdy, 244 Fed. at 810.

“The invention consisted in the described method by which the simultaneous welding, between dies, of handle and blade, and the closing of the butt end of the handle, was performed, in contradistinction from the former method, which took two operations by different sets of dies.” Clement Mfg. Co. v. Upson and Hart Co., 50 Fed. at 540. Compare Lee v. Upson and Hart Co., 42 Fed. 530.

“The plaintiff claims, broadly, patents on the process and on a machine for converting finished paper into stretchable crinkled paper for wrapping and packing purposes. . . . Crinkling moist paper by this general method of striking it against a doctor is old. . . . ‘It is not invention for a patentee to merely carry forward an old process, describing it in new terms and adapted equivalent modes under conditions recognized as possible within the knowledge of any mechanic.’ ” Arkell Safety Bag Co. v. Safepack Mills, 272 Fed. at 2, 3, quoting Cohn, Rissman and Co. v. Hickey-Freeman Co., 246 Fed. 256.

“The gist of the invention described in the patent consists in treating the leaves of the tobacco while they are being prepared for the cutting-machine with a solution



of gum arabic . . . so that the leaves will adhere together without other pressure than they are subjected to by the cutting machine. . . . Tobacco . . . has been treated with . . . materials. . . . Some of these, like liquorice, contain sufficient gum to produce more or less adhesion. . . . They were never applied with the object of producing adhesion, and the degree . . . was inconsiderable. Injunction.” *Kimball v. Hess*, 15 Fed. at 394.

“We think a method or process of blending two ingredients (cheese) which is recognized in the art as distinctly different in character and also as normally non-miscible or capable of blending, and effecting their blending and transformation of one ingredient by the pulverization of one of them and a union of them under moving mechanical contact followed by increasing the density of the resultant mass by refrigeration, so as to enable them to be molded into a fitting commercial form, constituted invention of a process which is patentable.” *P. E. Sharpless Co. v. Crawford Farms, Inc.*, 287 Fed. at 659.

“The use of the dies and . . . pressed steel . . . were but steps in the process. To build a head . . . in which might be erected the seat . . . another step. To use a metal that would permit of welding, which . . . made possible a solid block head, ‘integral with’ . . . and a seat extending ‘diagonally . . .’ . . . seemed . . . a cure. . . . We have no hesitancy in affixing . . . the title of inventor.” *American Steel Foundries v. Damascus Brake Beam Co.*, 267 Fed. at 576, 577.

“If, in the mixture of the patent, the water carries minute particles of oil down into the body of the dust, thereby binding the dust particles into a top dressing that adheres to the roadbed, a new result may have been obtained.” *Westrumite Co. v. Commissioners of Lincoln Park*, 174 Fed. at 147.

“ ‘It may be laid down as a general rule, though perhaps not an invariable one, that if a new combination and

arrangement of known elements produce a new and beneficial result, never attained before, it is evidence of invention.' ” R. Thomas and Sons Co. v. Electric Porcelain and Mfg. Co., 111 Fed. at 930, quoting Webster Loom Co. v. Higgins, 105 U. S. 580.

“This was an entirely new result based upon a phenomenon then unknown and still unexplained. . . . The art immediately adopted it . . . validity . . . sustained.” Miami Copper Co. v. Minerals Separation, Ltd., 244 Fed. at 756, 757.

“The Beecher invention was patentable. . . . The first act in the Beecher process is to cut out a rectangular blank. . . . The second step of Beecher is to form his blank over a mandrel.” Clement Mfg. Co. v. Upson and Hart Co., 50 Fed. at 540.

“The method here described saves the cost of the intermediate transforming devices . . . and also avoids the loss of electric energy caused by those transforming devices. It sacrifices the expensive . . . refinement . . . for a . . . commercially more useful method of control. . . . In each of the claims . . . the method therein described reveals an art or process, which consists in so controlling electric force as to make it accomplish a new result not theretofore secured. . . . These claims set forth patentable processes.” Bullock Electric Mfg. Co. v. Crocker-Wheeler Co., 141 Fed. at 109.

“The Shuman product was rough, in small sheets, not transparent, and could not be polished nor easily cut. All these things Schmertz remedied. . . . He was able to . . . exactly center the light, flimsy netting of wire in large sheets of glass, which were readily polished. . . . He made considerable improvement in size of sheets, quality of glass. . . . Results like these are not accomplished without the exercise of the inventive faculty, . . . entitled to a fairly broad and liberal range of equivalents.” Schmertz Wire Glass Co. v. Western Glass Co., 178 Fed. at 990, 991.

"The patentee made a step forward, and solved the problem of simultaneously heating and pressing a damp seam on the cigarette rod . . . appearance of the cigarette was improved and the seam securely sealed." *Ludington Cigarette Mach. Co. v. Anargyros*, 188 Fed. at 322.

"The use of the high vacuum with the particular form of nozzle . . . together with the other elements enumerated, results in accomplishing that which it had not been possible to accomplish before, and I consider it invention. . . . By . . . its method, therefore, not only is the material elevated, but its character is changed, and what was worse than useless becomes valuable as fuel." *H. J. Wheeler Salvage Co. v. Renelli and Guardino*, 295 Fed. at 723, 726.

"The use of caustic alkali in reducing vegetable substances to paper pulp was no novelty. Neither was boiling under pressure. But a process combining those things with a certain specified arrangement of the strength and quality of the alkaline solution, and a defined regulation of the heat and pressure, may well have been patentable if it had no other novel result than the production of paper pulp more economically." *American Wood Paper Co. v. Fiber Disintegrating Co. (Wood Paper Patent)*, 23 Wall. at 604. But see *Richter*, 415 O. G. 221 and *Wells*, 420 O. G. 292.

"If the result of his process is a product which he describes as 'devulcanized rubber having substantially the characteristics . . . ' . . . and if it further appears that this is the first time that this particular process was disclosed to the world, Marks was entitled to his patent." *Philadelphia Rubber Works Co. v. United States R. R. Wks.*, 229 Fed. at 151.

"By driving . . . directly under the wall . . . all necessity for any substantial intrusion either upon the area where the other work is waiting to be done or upon the basement or cellar of another person's building, is dispensed with. . . . The Breuchaud method . . . entitle

him to a patent." *Breuchaud v. Mutual Life Ins. Co.*, 166 Fed. at 758.

" 'It is inevitable that vapors and vapor-laden atmosphere would be created. . . . ' . . . If the asserted result was inevitable in the method of the patents, it was inevitable in the method in use prior to the patents." *Foley v. United States*, 260 U. S. 676.

"Marconi discovered the possibility of . . . transforming these oscillations into definite signals, and . . . combined the abandoned and laboratory apparatus, and . . . reorganized and adapted and developed them into a complete system, capable of commercially utilizing his discovery." *Marconi Wireless Tel. Co. v. De Forest Wireless Tel. Co.*, 138 Fed. 673.

"No one had described and demonstrated a system of wireless telegraph apparatus adapted for the transmission and reception of definite intelligible signals by such means. . . . The claims in issue are valid." *Marconi Wireless Tel. Co. v. National Electric Sig. Co.*, 213 Fed. at 825, 862.

"A mere difference in the proportions of the constituents of an alloy, however useful the result may be, does not entitle the originator to the monopoly of a patent, where such result reached gradually . . . and the final product differs from those of the prior art only in degree." *Bethlehem Steel Co. v. Niles-Bement-Pond Co.*, 166 Fed. at 897, quoting *Brady Brass Co. v. Ajax Co.*, 160 Fed. at 84. See also *Greene Process Metal Co. v. Washington Iron Wks.* 30 U. S. P. Q. 295.

"Instead of weaving each time she crosses from frame to frame . . . the operator now weaves every other time only. . . . Precisely how much time is saved is not established. . . . The new method consists in the introduction of the straight strand with its consequent saving of time and money. . . . Usual decree." *Travers v. American Cordage Co.*, 64 Fed. at 773, 774, 775.

“The novel feature of these claims consists in detaching the blow pipe from the lifting frame, and the simultaneous swinging out and lowering of the cylinder with the pipe attached thereto. . . . The Lubbers method at first thought would appear impracticable. . . . The conception was new, and a valuable addition to the art.” *Window Glass Mach. Co. v. Smethport W. G. Co.*, 266 Fed. at 95.

“But floride of calcium will dissolve only 1 per cent. of its own weight in alumina, and fluoride of sodium even less. This does not show that any chemist knew, until Hall discovered it, that cryolite would dissolve alumina as water does sugar. . . . The difference between what Hall discovered and what was known before him in this regard is the difference between complete knowledge on a subject and so little as to be wholly useless and not suggest further inquiry.” *Pittsburgh Reduction Co. v. Cowles Electric S. and A. Co.*, 55 Fed at 312, 313.

“That both the process and the product of the appellant were patentable we entertain no doubt. While the record shows that various kinds of artificial stone had been theretofore made, it is not pretended that before Denivelle’s manufacture any artificial travertin had been successfully made.” *Los Angeles Lime Co. v. Nye*, 270 Fed. at 160.

“It is not shown that these differences are traceable to the difference in quality and specific gravity of the oil residuum treated. . . . In chemical processes, the converse of the Pickhardt Case would seem necessarily to be true; i.e., that a lack of identity between the two products argues a lack of identity in the processes.” *Standard Asphalt and R. Co. v. American A. and R. Co.*, 203 Fed. at 513.

“An equivalent has been defined as a thing which works in substantially the same way to accomplish the same results, and perform the same functions as the thing for which it is substituted. . . . There being new properties



and results developed in the art of bread-making, it cannot be said that such results would have been obvious." *Ward Baking Co. v. Hazelton Baking Co.*, 292 Fed. at 205. But see *General Electric Co. v. Paramet Chem. Corp.* 82 Fed. (2) 280.

"All that can . . . be conceded to the complainant is that by adjustment of the machine operating as before they may have improved to some degree the stay manufactured by placing the wire under an indefinite degree of additional torsional twist. However, the simple carrying forward of the old idea, and doing what had been done before, in substantially the same way, but with possible better results, is a change not involving invention." *Spirella Co. v. Nubone Corset Co.*, 216 Fed. at 903.

"The gist of Straub's invention is the use of cinders and ash as a whole, without screening or choice of any one or more of its parts. The product . . . is new in make-up and new in function . . . has the wholly new feature of allowing a nail to be driven in without breaking, and firmly holding the nail in place . . . his patent is valid." *Straub v. Campbell*, 259 Fed. at 573, 574.

"The fact that alcohol has been used for many years as a menstruum, when a cheaper solvent could have been used, and would have been, if the availability of fusel oil as a substitute had been obvious to those skilled in the art, is inconsistent with the suggestion that nothing but the mere exercise of judgment was involved in selecting it as a substitute." *Celluloid Mfg. Co. v. American Zylonite Co.*, 35 Fed. at 301.

"The physical part was simply to light a small, primary ignition zone . . . but that . . . instantly . . . passed into a quiet reaction—a new result. . . . First, Goldschmidt did away with the use of all fuel . . . second, Goldschmidt did away with the violent ebullition . . . third, did away with the metal waste . . . fourth . . . he so reduced the heat attack on the manganese lining of the crucible as to get a practically carbon free product."

*Goldschmidt Thermit Co. v. Primos Chemical Co.*, 292 Fed. at 365.

"The treatment of beer by bicarbonate of soda, used in the form of a powder, was well known; and the issue here is whether the conversion of the powder, by compression, into lumps, granules, or cartridges of suitable size and weight was new. . . . The complainants do nothing more than apply the lumps or cartridges to beer instead of water, and thus adopt an old form or method of applying the alkali, without any novelty in the mode of its application, and this . . . will not sustain a patent, even if the new form of result has not been before contemplated." *Zinsser v. Krueger*, 48 Fed. at 300.

"He produced a new thing—a silver plated steel spoon which was cheap, durable, beautiful, and useful. Having . . . accomplished what other men tried to do and wanted to do, but did not do, and having shown that he attained the result by a succession of old processes which, though separately old, had not been practically grouped together in the order in which he used them, the only fair conclusion is that there must have been patentable novelty in the process." *Wallace v. Noyes*, 13 Fed. at 180.

"If the process is the same, we fail to understand how the composition of coke oven and shale gas and the composition of natural gas affects the question to be determined. . . . The process recovers the vapors whatever their composition, and even if there be a difference in the composition, Saybolt was simply applying the old process to a new use, which was not invention." *Standard Oil Co. v. Oklahoma Natural Gas Co.*, 284 Fed. at 477.

"The great changes wrought in the industry at or about the time of its appearance were not due to the invention of the patent but to the automatic plug-mill, and that with the automatic plug-mill economically finishing (for some uses) tubes of greater length and narrower walls, invention was not involved in taking from this mill hot tubes wholly finished as to dimensions and smoothing them in

a way known to the art.” *Shelby Steel Tube Co. v. Standard Seamless Tube Co.*, 286 Fed. at 869, 870.

“The resort to sheets of spongy texture as the material from which to cut the pattern-forming shapes, and the permanent attachment of those shapes to the backing by means of their own adhesive nature or penetrating capacity, and wholly without the use of any separate cementing composition, was entirely new and original with Melvin. Upon his conception that this was feasible his process was founded, . . . although it may now seem strange that the practicability of making inlaid floor-cloth without using cement had not been recognized before.” *Melvin v. Thomas Potter, Sons and Co.*, 91 Fed. at 153.

“Sealing rings and like articles were always formed by first making a piece of tubing and then cutting it cross-sectionally into lengths to form rings. The process is essentially the same, whatever the shape or configuration of the tubing from which the rings are cut. Tubes of various forms and shapes were old in the plastic art, and so, too, was the method of cutting them into rings for use.” *Coldren v. Empire Rubber Mfg. Co.*, 175 Fed. at 365.

“He was the first to show the art the difference between a vicious slag and an innocent slag and he proceeded . . . by regulating the temperature of the slag in a way that has proved entirely practicable. Here was inventive discovery which involved the intelligent comprehension of relations not before recognized, although actually existing, followed by the conception of how they can be practically utilized. . . . While dealing with old elements in the sense of old ingredients, it involves new results from their new proportions, embracing new qualities of utility. . . . The fact that an art has long presented a problem and that the process of a patent has solved it, as well as the fact that the process has gone into large general use and has produced new and economical results, speak for

its inventive character." *United Verde Copper Co. v. Peirce-Smith Converter Co.*, 7 Fed. (2) 16, 17. See *Phair* 384 O. G. 477. But see *Aerovox Wireless Corp. v. Polymet Mfg. Corp.*, 59 F. (2) 741.

"The carbonic acid gas . . . is made . . . to first accumulate in the space above the beer in the closed cask, until the pressure is such that the gas overcomes the density of the beer, and enters it again . . . so that gravity can act on the yeast and impurities, and carry them down so that they will remain with the shavings at the bottom. This is a new . . . method." *New Process Fermentation Co. v. Maus*, 122 U. S. at 428, 429.

"Nobody has ever used albumen as a cement for this purpose before, and the substitution of an albuminous cement for the earlier resin and waxes produced a patentable invention." *International Cork Co. v. New Process Cork Co.*, 6 Fed (2) at 422.

"This new roller . . . on the soft concrete soon causes much air and water and mortar to rise, making a fluid coating over the work . . . getting partially afloat, and it touches but lightly the stony masses beneath. . . . The mixture is kept by the roller's motion in a quaking state. . . . The roller . . . is made to push the accumulating water off the work. . . . Soon, the water having been much decreased and the mortar above the stones becoming more solid, it will again sustain the weight of the instrument, which smoothes and presses it . . . valid." *Macon Concrete Roller Co. v. Brooks-Calloway Co.*, 272 Fed. at 344, 345.

"The use of a covering as a retaining member . . . was novel. Moreover, to utilize the plastic material this enclosed as an adhesive material, in securing the edges of the retaining member and attach the top cover member to it as described in the process, was novel and somewhat ingenious . . . was invention." *Bestwall Mfg. Co. v. United States Gypsum Co.*, 270 Fed. at 544, 545.

“Newkirk in carrying out his process ran counter to every settled conviction in the art. He produced the hydrate where the settled conviction in the art was that the process lay in the other direction.” *International Patents Development Co. v. Penick*, 30 U. S. P. Q. 303.

“The old method . . . was just as good . . . but . . . each fastener had to be sharpened by hand. . . . The old process . . . formed burrs. . . . By the new the fasteners are cut so as to avoid this defect, grinding being used only as a slight finishing treatment. . . . Complainant cuts the metal at the middle line of the strip by a single operation, leaving a sharp cutting edge.” *Acme Steel Goods Co. v. American Metal Fasteners Co.*, 206 Fed. at 479, 480.

“The characteristic artificial lag of the patent, piled upon the natural lag, was neither known nor understood to be present, nor was it present in any such substantial degree as necessarily to involve and anticipate Andrew’s operative theory. . . . The claims in suit are valid.” *Northern Equipment Co. v. McDonough Automatic R. Co.*, 300 Fed. at 493.

“When Cooley ascertained that . . . to bottle up the milk entirely was too expensive . . . and that a cover for the entire tank was inadmissible . . . and that in a creamery it was indispensable that each can should be sealed . . . as simply as possible, and that a water and air seal combined simplicity and efficiency, his process which carried these principles into effect was the work of an inventor.” *Vermont Farm Mach. Co. v. Gibson*, 56 Fed. at 147.

“The patent in suit is for a process. . . . The essence of the invention lies in the fact that the tip is so regulated by a stop that the reservoir can never be wholly emptied, but a ‘considerable quantity’ of metal always remains—a dominant pool,—into which successive additions are received.” *Carnegie Steel Co. v. Cambria Iron Co.*, 185 U. S. at 415, 416.



“The process is really a combination of process steps, and if one of these steps be novel for purposes in hand it gives novelty to the process considered as a whole.” *Ex parte Kalteyer and Bartholomew*, 57 O. G. 1127.

“The patent to Caldwell describes every step of the process except the forming of the parts into pills by a machine—that is, this patent shows . . . dividing the pill mass into parts . . . and then rolling each part into a pill. . . . The patent to Kumler shows that it was old to roll a part of the pill mass . . . into pills. At most, therefore, applicant’s process differs from the old process by the substitution of a machine for the hand in performing one step. This, however, does not make a new invention in the process, which is the same whether performed by hand or machinery.” *Ex parte Colton*, 101 O. G. 2285.

“The method of internal heating used by appellant . . . was solved by Ellis. Serpek, however, does disclose, so far as the chemical operation is concerned, the same process of producing aluminum nitrid from bauxite or other aluminous matter. The Ellis furnace shows the . . . used in substantially the same manner as in the present application, except that Ellis is treating iron ore . . . ‘the chemical process and the heat treatment are distinct subjects and . . . there is nothing inventive in . . . reducing aluminum oxide in the same way as the iron oxid.’ ” *In re Duncan*, 245 O. G. 553.

“Appellant utilizes the process of Schoop and Morf, the only difference being that he applies it to shoes while Schoop used it to coat metal, paper, fabric and the like, and Morf to coat glass and other substances. . . . Nothing could be more evident to one knowing the prior art and having a conception of a metal coated shoe than that an ordinary shoe could be coated by the prior art process to produce appellant’s patented article.” *In re Braselton*, 288 O. G. 431.

“The outer periphery of the hub is roughened . . . and a working body portion . . . consisting essentially of fibrous sheet material impregnated with a phenolic condensation product, is consolidated upon the hub by heat and pressure. . . . Examination of these patents discloses that, taking them as a whole, they anticipate each element in the claims. . . . An anticipating patent, though crude and commercially undesirable, may teach one skilled in the art how to make it a commercial success without invention.” *In re Talley*, 313 O. G. 231.

“Knowledge and practice of the steps of shaping a garment while dry on a form, moistening or dampening it, or, as an alternative, drying it on the form, was possessed by those familiar with this art. . . . There was no inventive concept in merely performing these three operations . . . in the order described.” *Ex parte Witherell*, 317 O. G. 757.

“The plaintiff concedes that its process can be carried out by hand with the use of ordinary tools well known in the art. It is also apparent that a person skilled in the art of shoe-making, if called upon to punch and set blind eyelets by hand in an upper, the edges of the outer and inner layers of which open, without disturbing the alignment of the holes—the problem said to have been solved by the patentee . . . could perform the work without the exercise of inventive thought. Such being the case, the claims . . . are invalid.” *United Shoe Machinery Co. v. L. Q. White Shoe Co.*, 279 Fed. at 39.

“The single claim of the patent is in these words: The process of suspending a cable or conductor, consisting—First, in running a wire . . . secondly, in hanging. . . . We are not prepared to declare that the Chinnock improvement was an obvious one.” *Chinnock v. Paterson P. and S. Tel. Co.*, 112 Fed. at 533.

## CHAPTER 6

### OF THE NATURE OF A PATENTABLE MANUFACTURE OR COMPOSITION OF MATTER

The Patent Statute provides for the granting of a patent to the inventor or discoverer of a "manufacture, or composition of matter." There are relatively few decisions as to the nature of a patentable manufacture, and a number of these are absolutely irreconcilable, as is shown by some of the cases excerpted below. It would seem that a manufacturer or a composition of matter may be patentable either because it is a discovery, of the class described in Chapter 4, or because its elements cooperate in a novel way, as do the elements of patentable mechanical inventions.

#### WHAT THE COURTS HAVE SAID

##### I. In General

"The term manufacture would seem, under our statute, to be used to distinguish the thing made from the art, i.e., process of making it, or from the machine that makes it, or from the mere union of the materials which compose it. . . . Some brittle article may be thrown into an old annealing pot and may come forth so changed that it is virtually a new thing. . . . He does not invent the process; that is old. He discovers the manufacture." *Ex parte Ackerson*, 1869 C. D. 75.

"The patented index is designed for use in connection with books. . . . The term 'manufacture,' as used in the patent law, has a very comprehensive sense, embracing whatever is made by the art or industry of man, not being a machine, a composition of matter, or a design.

. . . Letters patent for an improvement in pocket check books were sustained. . . . Judge Colt sustained a patent whose subject matter was of a like nature . . . a combined book and index . . . was held to be a patentable improvement . . . upheld a patent for an improvement in duplicate memorandum sales slips . . . sustained a patent for a bank account book. . . . The subject-matter of the patent in suit is patentable.” *Johnson v. Johnston*, 60 Fed. at 619, 620.

“The first ‘card index’ was plainly patentable, not because it was perhaps an excellent index, but because the means . . . were novel. . . . The only thing constant about this index is the method or art of compiling it; i. e., advice as to how to compile, which is not patentable.” *Guthrie v. Curlett*, 10 Fed. (2) 726, 727.

“While, in construing the patent in suit, it is important to determine whether it is for the alloy per se, the process or the machine used in its manufacture, or a particular use or article . . . it is not necessary to make such classification of the prior art . . . disclosures. . . . If in the history of the art some patentee has disclosed things of value, but for some reason has not claimed them, one seeking a patent at a later date cannot successfully claim those earlier things.” *Haynes Stellite Co. v. Chesterfield*, 8 Fed. (2) 769.

“If Flaherty did no more than disabuse the art of a misconception, it is evidence of originality . . . the name of invention.” *E. I. Du Pont De Nemours & Co. v. Glidden Co.*, 67 Fed. (2) 397.

“The composition of matter are shown to be useful, agreeable to those who use them, profitable to the plaintiff through his manufacture and sale of them, and new. This constitutes patentability.” *Rogers v. Ennis*, 14 O. G. 601.

“If a carpenter has the separate pieces of a door frame delivered at the building, or cuts them out himself, and inserts them in the door opening separately, he does not

practice Boda's alleged invention; but if the man gets them out, or has them delivered to him, at the factory, and then fastens some of them together, so that he can carry them to the building in two sections . . . then he does practice Boda's alleged invention. . . . Bill dismissed." *Roehr v. Bliss*, 98 Fed. at 121.

"Nor can it be said that the properties forming plaintiff's and defendant's yeast food . . . covered by the composition patent, are an aggregation. If the combination produces new and useful results by reason of the several combined elements and not only the aggregate of the distinct several, it will not be so designated. . . . The calcium and ammonium salts produce new yeast growth, and the potassium bromate stimulates the proteolytic activity." *Ward Baking Co. v. Hazleton Baking Co.*, 292 Fed. at 206.

"In order to be patentable an invention must possess utility . . . it was determined that . . . it is a non-conductor of electricity; that it is a reducing agent and can be used in operations where silicon and aluminum are now employed. . . . Such apparent usefulness of the newly-discovered compound being shown, nothing more was requisite." *Potter v. Tone*, 163 O. G. 729.

"This is a new combination . . . a horn, the acoustical properties of which are as good as any, is constructed without skilled labor, expensive machines . . . the materials entering into its combination are inexpensive. . . . There is uniformity of product in the long run, and it possesses the ability to retain its form under all conditions which it would meet in use. These are indications of invention." *Abrahams v. Universal Wire Co.*, 10 Fed. (2) at 841.

"The divisible sheet providing four individual playing instructions, each combined with its related hand of cards, constitutes a definite mechanical structure." *Williams*, 28 U. S. P. Q. 93.



“The sole question to be determined here is whether a pulley having its roughened surface chromium plated is patentable. . . . The result was not a new or unexpected result. . . . We are unable to agree that it constitutes an invention.” Hull, 25 U. S. P. Q. 11.

“Marking of animal carcasses did not constitute patentable subject matter so far as product claims are concerned.” McKee, 25 U. S. P. Q. 12.

“The circuit court of appeals, while finding that the change from camel’s-hair to horse-hair mats was sufficient to constitute invention in this art, if this use of horse-hair mats was first disclosed by Werk, nevertheless found, from an examination of standard works, that the patentee’s use was but a revival of an old and well-recognized use of such mats in the art of oil extraction. . . . The patents involved no claim of an improvement in the art of weaving, but only the application of that art and a combination of threads of a certain type and character in order to produce a particular result. And this, in our opinion, goes no further . . . not rising to the dignity of invention.” Werk v. Parker, 249 U. S. at 132, 133.

“An advertising scheme which would encourage receivers to keep the name and address of the sender. . . . The method devised was to print the name and address of the sender on a gift . . . which is a part of the device, and which the receiver will be likely to keep. . . . The advertising device . . . is a manufacture within the patent law, and therefore patentable.” Mitchell v. International Tailoring Co., 170 Fed. 91.

“Patentable novelty does not reside in the arrangement of the printed text, nor does such text constitute merely a printed agreement. The argument to that effect overlooks the important consideration that the body alone is good at one time, and that the body and coupon are required for the other portion of the day; and that the ticket bears on its face, whether the body is used alone

or with the coupon, the distinguishing indication. . . . The authorities cited in the margin sustain . . . the patentability of this device." *Cincinnati Traction Co. v. Pope*, 210 Fed. at 446, 447. See also *Reeves* 428 O. G. 769, and *Scott* 25 U. S. P. Q. 15, but see *Myers v. Coe*, 29 U. S. P. Q. 108.

"We see no logical escape from the conclusion that the roof wherein these parts are assembled and used is in fact a thing manufactured, and therefore within the word 'manufacture' as used in the patent law." *Riter-Conley Mfg. Co. v. Aiken*, 203 Fed. at 704.

"A monument is manufactured, and in our opinion is a 'manufacture,' and not, as urged by the defendants, a species of architecture. It comes within the dictionary definition of the former term, and, if we go beyond that and look at trade usage, we find in the present record the defendant's own witnesses describing themselves as monument 'manufacturers' and speaking of 'manufacturing' monuments. For these reasons we hold the patent valid." *Crier v. Innes*, 170 Fed. at 326. See also *Turner v. Quincy Market, C. S. and W. Co.*, 225 Fed. 41.

"It clearly would be an undue expansion of the word 'manufacture' to hold that it includes the construction of a house, or of any room or recess in a house. . . . In *Fond du Lac County v. May*, 137 U. S. 395, the court, in referring to *Jacobs v. Baker*, 7 Wall. 295, said: 'This court held that an improvement in the construction for a jail did not come under the denomination of a machine or manufacture, or a composition of matter, and that it was doubtful whether it could be classed as an art.' " *American Disappearing Bed Co. v. Arnaelsteen*, 182 Fed. at 325.

"A patentable composition of matter may well result or be formed by the admixture of two or more ingredients, which develop a different or additional property or properties which the several ingredients individually do not possess in common." *P. E. Sharpless Co. v. Crawford Farms, Inc.*, 287 Fed. at 658.

“An alloy never mixed before may effect so startlingly new a result as to arrive at even pioneer invention . . . but ordinarily the rule is that it is the invention of what is new, and not the attainment of comparative superiority or greater excellence in that which was already known, that amounts to patentable invention.” *David Belais v. Goldsmith Bros. Smelting and Refining Co.*, 10 Fed. (2) at 675.

“The rubber tiling before Stedman’s manufacture was not nearly so beautiful or so useful a material. Because he had skill . . . cannot give him a monopoly.” *Stedman v. Puritan Rubber Co.*, 11 Fed. (2) at 281.

“It is true that the wax castings were old . . . but . . . he used a translucent covering of similar material having the same [coefficient of] expansion as the casting itself, and thus created a product that would not chip or crack. . . . It is the result of a novel method amounting to invention.” *Emery v. George H. Bowman Co.*, 11 Fed. (2) at 526.

“Articles of manufacture may be new in the commercial sense when they are not new in the sense of the patent law. New articles of commerce are not patentable as new manufactures, unless it appears in the given case that the production of the new article involved the exercise of invention or discovery beyond what was necessary to construct the apparatus for its manufacture or production.” *Union Paper Collar Co. v. Van Deusen*, 23 Wall. at 563.

“Finding, as we have now done, that plaintiff’s method patent is valid, it follows that the object produced by that method is also an invention, because it is a tubing electrically butt-welded and presenting in the weld ‘recurrent variations in metal texture,’ etc. (claim 3), of which the ocular proof is the ‘stiched’ weld seam.” *Elyria Iron & Steel Co. v. Mohegan Tube Co.*, 7 Fed. (2) 830.

“The product patent is for the kind of stitch that the patented machine will make. . . . The invention in the

case of such a product patent must lie exclusively in the conception of the product, and regardless of any method of its production." *Buono v. Yankee Maid Dress Corporation*, 26 U. S. P. Q. 61.

"These claims recite as steps of a method the assembling of certain apparatus . . . coupling . . . dividing connecting. . . . Such expressions do not define steps of a proper method but merely the assemblage of certain units for a particular purpose." *Allen*, 28 U. S. P. Q. 90.

"The law seems to be settled that a mere imitation of a well-known article is not patentable unless there is novelty in the means by which the imitation is carried out, and then the question of infringement hinges on the infringement of the means and not the result." *Putnam v. Beaver State Shingle Co.*, 46 Fed. (2) 354.

## II. Pure Chemical Compounds

"In chemical compound inventions prediction is futile. Experiment is all essential, and the successful test of a new agent, producing a sought for new result, is a new discovery, unless its use is taught by prior art." *Diversey Corp. v. Mertz*, 13 Fed. Supp. 411.

"A natural product, such as ordinary salt ( $\text{NaCl}$ ) could not be made the basis of a patent, nor could a discovery of the chemical reactions by which salt was formed in nature, from sodium and chlorine, be patented as a process. But if artificial salt, as a chemical substance, could be distinguished from natural salt, and if someone discovered a way to make artificial salt, he could patent the method or process, if it were novel. Provided he was the first one to produce the substance, he could patent the product as something useful in commerce or in the art. . . . At a time when the only product of phenol and formaldehyde, known and described with understanding and definiteness, was a permanently fusible and permanently soluble gum, the discovery of a

method of rendering this product insoluble and fusible was patentable, and provided that product could be certainly identified and distinguished from the former and known products, it could be patented as well as a combination of such substance in certain relations or proportions." *General Bakelite Co. v. Nikolas*, 225 Fed. at 556.

"Crystalline calcium carbide existing as masses of aggregate crystals . . . valid." *Union Carbide Co. v. American Carbolite Co.*, 188 Fed. 334.

"It sometimes happens that some one substance in a known class of substances is found to be greatly superior for a particular purpose. The discovery of a greatly superior material in a known class of materials under such circumstances may amount to invention. . . . Even though the references may indirectly teach a possible equivalency of pectin, they certainly do not teach that it would be superior to the other substances for the purpose in question. . . . Appellants are entitled to the claims." *Joseph*, 25 U. S. P. Q. 22.

"It may be true that in view of the close relationship between lauric acid and other acids formerly employed for this purpose, it would be obvious to employ this acid, still since an unexpected result apparently flows from its use, we believe that appellant is entitled to protection on this discovery." *Dolid*, 25 U. S. P. Q. 23.

### III. Coatings and Coverings

"Claims 5 and 6 describe the product. . . . In claim 5 Coslett mentions as ingredients 'normal ferric and ferrous phosphate of iron,' while in claim 6 he does not attempt to be so particular in his character of the coating." *Parker Rust Proof Co. v. Ford Motor Co.*, 6 Fed. (2) at 657.

"Infringement of claim 4 was also adjudged, and that claim was held to be a claim to the product or coating named in it, having the qualities described in it. . . . As



to claim 4 it is distinctly a claim to a product or article of manufacture, and patentable as a manufacture . . . is a valid claim irrespective of any employment of the invention covered by claim 1." *United Nickel Co. v. Pendleton*, 15 Fed. at 741 and 746. See also *United Nickel Co. v. Central Pacific R. Co.*, 36 Fed. at 188.

"It is evident that the wrapping cannot be made except on an annular structure or exist as a wrapping apart from the structure on which it is made. When made on an annular structure it becomes a part of it and can be removed only by being destroyed. . . . As the alleged wrapping cannot be made apart from an annular structure and is of no use as a wrapping when severed from it, it is not, in and of itself, the subject of a patent, for in and of itself it is useless." *Terkelsen Mach. Co. v. Pierce Wrapping Mach. Co.*, 5 Fed. (2) at 296, 297.

"Whether a locational arrangement within a structure can ever be patented as a manufacture need not be determined. Nor need we consider whether the patent, as issued, contained a sufficient disclosure of the alleged invention. For the combination in suit lacks patentable invention and novelty. Each of the elements—refrigerant, material to be refrigerated, and container—performs its function in a known way. Long prior to the date of the claimed invention, it was known that solid carbon dioxide, which has a temperature of 110 degrees below zero, is a refrigerant; that when it 'melts' it passes directly into a dry gas heavier than air, of like low temperature, which may serve as a refrigerant until its temperature rises to that of the outside air. It was known also that a frozen article—be it ice cream or solid carbon dioxide—will remain frozen longer if insulated; and that paper is an insulator. It was not invention to conclude that a cake of the solid dioxide wrapped in paper would remain solid longer if also surrounded by ice cream, than if placed in more immediate proximity to the walls of the container and thus to the outer air; or to conclude that

the gas, being heavier than air would, as generated, drive the air out of the container, and thus serve as an additional insulator.” *Carbice Corp. of America v. American Patents Development Corp.*, 283 U. S. 421, 422.

#### IV. Transitory Products

“While Overbury’s claims are for the blank with the transverse slots adapted to be slit, and while, before slitting, the blank was not in a condition for practical use, it was an article of manufacture which Overbury contemplated that builders or wholesalers or retailers might buy, and they or the user, by slitting it longitudinally through the slots, would have two lengths of simulated shingle roofing. Utility in a patent does not require that the product, in itself and apart from any application of commonly known means, be in a condition for practical use. True, the patentee is bound to disclose a mode in which his invention may be rendered practically useful, but it may be one of many modes and it may necessarily involve the use of other known devices which may be required in order to effect the useful result.” *Flintkote Co. v. National Asbestos Mfg. Co.*, 52 Fed. (2) 721.

“Said claims 1 and 2 were ‘primarily improper because as drawn they appear to claim a product in its transitory stage instead of in its final form. The finished product includes concrete which is completely cured and not partly cured.’” Appellant contends that said claims 1 and 2 are process claims and not product claims, but we are unable to agree with him. We agree with the Board that said claims describe a product consisting in part of partly cured concrete, whereas it is clear from appellant’s specification that the product resulting from his process is a paving for streets in which there is no partly cured concrete, but consists in part of completely cured concrete. We find no error upon the part of the Board in rejecting

said claims 1 and 2 upon the ground last above stated.” In re Stubbs, 58 Fed. (2) 447, 448.

“There is nothing to show that Father Calhoun did not simply make stencil sheets, coated with nitrocellulose and softened with castor oil or palm oil, which had but a short-lived use. They still might have answered a temporary purpose.” A. B. Dick Co. v. Simplicator Corp., 34 Fed. (2) 939.

#### **V. Patents Are Not Granted If Founded Upon Statements Which the Examiner Believes To Be Untrue**

“It is regarded as too doubtful whether a layer of water one-eighth inch deep will prevent hailstones from breaking greenhouse roofs. It appears to be merely a supposition on applicant’s part that such is the case. We do not find any definite statement in the record that the method has been tried and found operative in any specific instance. We accordingly hold that claims 1, 2, 3, 10 and 11 are based on a method which is inoperative to produce the claimed protection.” Ex Parte Renard, 19 U. S. P. Q. 258.

“Mertz, as promulgator of a fallacious theory, was not the inventor. Patents are not granted for false theories . . . in chemistry, invention results from empirical or experimental discoveries.” Diversey Corp. v. Mertz, 13 Fed. Supp. 412.

#### **VI. Patent Office May Require Proof That a Medicinal Compound Is Useful Beyond Reasonable Doubt**

“The claims are rejected for lack of utility as there is nothing convincing of record to prove that applicant’s product cures cases previously deemed hopeless and that it is safe, effective and reliable for the purpose in view. In the absence of proof beyond any reasonable doubt as to the allegations made in this case, the claims are rejected.” Osbourne, Serial No. ———.

“Proposed new remedies and cures for them [diseases previously regarded as hopeless], particularly the latter, should be subjected to thorough tests by numerous disinterested, trained scientific observers before being sanctioned to the extent of granting patents therefor.” Board of Appeals, unpublished decision.

“So the real problem confronting appellee was to put the active extractives of cod liver oil into the form of a dry medicinal agent. Having conceived this idea and having actually produced cod liver oil tablets, it was not necessary that any given number of the tablets contain a particular quantity of active extracted ingredients of cod liver oil. . . . Appellee was an experienced chemist. He knew the therapeutic value of the ingredients in the tablets he manufactured, and, having successfully performed the involved process, and produced the involved product, which he did in March or April, 1920, he had reduced the invention to practice.” *Larson et al v. Eicher*, 49 Fed. 2nd, 1029.

## CHAPTER 7

### OF ANTICIPATION BY PRIOR USES IN GENERAL AND AS RELATED TO PROCESSES

The Patent Statute provides that a patent is void if the alleged invention was known or used by others in this country before the patentee's invention or discovery, or more than two years prior to the filing of his patent application. The Courts have, therefore, found it necessary to determine what prior uses resembled the invention in issue closely enough to be counted as anticipations, what is the relationship of prior machines to the invention in issue, and whether an alleged prior use was such as to constitute use within the meaning of the statute. It may be pointed out that the word "known" in this section of the statute should ordinarily be construed as adding nothing to the word "used."

#### WHAT THE COURTS HAVE SAID

##### **I. Prior Uses in General**

"A process patent can only be anticipated by a similar process. A mechanical patent is anticipated by a prior device of like construction and capable of performing the same function; but it is otherwise with a process patent. The mere possession of an instrument or piece of mechanism contains no suggestion whatever of all the possible processes to which it may be adapted. . . . If the mere fact that a prior device might be made effective for the carrying on of a particular process were sufficient to anticipate such process, the absurd result would follow that, if the process consisted merely of manipulation, it would be anticipated by the mere possession of a pair of



hands." *Carnegie Steel Co. v. Cambria Iron Co.*, 185 U. S. at 424.

"The patent being for a process, each ingredient and each step is necessary to make the operation a success. . . . The materials may all have been ready at hand, but unless they were combined by others in the manner described by the inventors, there is no anticipation." *Celluloid Mfg. Co. v. Russell*, 37 Fed. at 679.

"We cannot meet an invention by art which suggests a line of tests, some of which experiment later shows would produce the result and some of which similar experiments show would not." *Diversey Corp. v. Mertz*, 29 U. S. P. Q. 296.

"We have no prior art but only the examiner's opinion that any diathermic heating inherently results in the shrinking of tissue. It seems to us that something more than a mere opinion of this sort is necessary to constitute a valid basis of rejection." *Wappler*, 26 U. S. P. Q. 192.

"Whenever in an art, machine, manufacture, or composition of matter a change, however apparently minute, is made which is not obvious and which results in marked advantages the rule is that a patentable invention has been produced, and when the history of the art is such that the inducement to make the change is very great, by reason of its value, and the change remains unmade for a considerable time, that is evidence approaching the conclusive that the change is not obvious." *Ex parte Champney*, 60 O. G. 1051.

"The modifications which they made in the process of manufacture were trivial, yet the fact . . . remains that their process was the first that was actually successful in the long attempt to make an article which should be both attractive and useful." *Celluloid Mfg. Co. v. American Zylonite Co.*, 28 Fed. at 196.

"Whenever a change in the method of making an article produces a different and beneficial result, although the difference consists only in improving or cheapening the

article, and the change and its advantages had not been seen or made by others (than the patentee) interested in seeing and making it, there is sufficient evidence of invention to sustain a process patent." *Zinsser v. Kremer*, 39 Fed. at 114.

"If the principle of operation of the discovery is insolvable to the human mind today it could not have been predicted or anticipated by the human mind in March, 1905." *Minerals Separation, Ltd. v. Miami Copper Co.*, 237 Fed. at 617.

"He was the first to combine old elements in such a way as to eliminate impairments and produce a new and useful result. His claims . . . asks only for protection for the specific thing that he has done. I think he is entitled thereto." *American Optical Co. v. Shuron Optical Co.*, 9 Fed. (2) at 935.

"Where a need or a difficulty in any given art has been widely recognized, and has led to many efforts to supply or overcome it, I have thought that a result which was rapidly received as successful was pretty strong evidence of invention. . . . The fabric already being manufactured when the suggestion was made was found useful. . . . I do not think that the commercial success of the plaintiff's product is much evidence of invention." *Respro, Inc. v. Sydeman*, 11 Fed. (2) at 781.

" 'When a patented process or machine proves a failure, is inoperative, and another follows, and is a success, in its operation, the latter is a new invention and patentable, even though we have the same machinery. . . . In such case it is evident that the later patentee has succeeded where the other failed; that he has discovered or invented the desired thing to accomplish a new and useful result; that his change, however unimportant it may seem to the observer, is the key to the whole situation.' " *American Graphophone Co. v. Universal T. M. Mfg. Co.*, 145 Fed. at 638, quoting *Kirchberger v. American Acetylene Co.*, 124 Fed. 764.

“ ‘If the process pursued for its development failed to reach the point of consummation, it cannot avail to defeat a patent founded upon a discovery or invention which was completed. . . . The law requires not conjecture but certainty.’ ” *American Graphophone Co. v. Leeds and Catlin Co.*, 170 Fed. at 331, quoting *Coffin v. Ogden*, 18 Wall. at 124.

“It is true the defendant constructed a model of the Pettie device, which can be assembled by eccentric displacement; but it was not constructed in exact accord with the dimensions set forth in the patent, but had been adapted to be assembled in accordance with the method found in the complainant’s patents . . . only by the use of the information suggested by the complainant’s patents. This alone, however, will not be permitted to invalidate the claims of complainant’s patents.” *Hess-Bright Mfg. Co. v. Standard Roller B. Co.*, 177 Fed. 437.

“Nobody . . . had ever treated a mix of the prescribed proportion by all these steps. Kroll approached that proportion . . . but he had not treated it similarly. The difference might be of little or of very great importance; it might be a step which the art was sure to take, or it might demand a high degree of originality; it is impossible to decide such questions a priori, and it is a mistake to belittle the invention because it demands only trivial variant. The true question is what new understanding was a condition upon its appearance, however inconspicuous by itself the variant might be.” *Catalin Corp. v. Catalazuli Mfg. Co.*, 79 Fed. (2) 597.

“Reasoning by analogy in a complex field like chemistry is very much more restricted than in a simple field like mechanics. . . . You cannot apply the doctrine of mechanical equivalents to a chemical patent.” *Naylor v. Alsop Process Co.*, 168 Fed. at 919.

“Mere analogy is not, in chemistry, usually so certain an index as in mechanics.” *Toledo Rex Spray Co. v. California Spray Chemical Co.*, 268 Fed. at 204.

"Chemistry is essentially an experimental science, and chemical prevision is as impossible today . . . as it was in former times." *General Electric Co. v. Laco-Philips Co.*, 233 Fed. at 103.

"The method of restoring the lustre and improving appearance of discolored coal which comprises treating it with oxalic acid. . . . Its use was an original conception and one the art was not solving and did not think solvable. . . . The problem of rusty coal was submitted to a chemist of long practice. . . . I suggest . . . tri-sodium phosphate . . . valid." *Philadelphia and R. C. & I. Co. v. Delaware L. & W. C. Co.*, 32 U. S. P. Q. 408, 409.

"Prophecy is not sufficient to invalidate a patent." *Electric Machinery Mfg. Co. v. General Electric Co.*, 28 U. S. P. Q. 340.

"Chance hits in the dark will not anticipate an invention." *Aerovox Corp. v. Micamold Radio Corp.*, 15 Fed. Supp. 283.

"An anticipation must speak affirmatively and with certainty; must disclose the invention without debate, it is not enough that the proper proportion of that acid might empirically be put on." *Catalin Corp. v. Catalazuli Mfg. Co.*, 79 Fed. (2) 596.

"The patent to Young . . . issued March 25, 1930. . . . On October 10, 1929, the patentee . . . inserted . . . by amendment . . . the introduction of hydrocarbon oil during the back-run cycle. . . . Applicants filed an affidavit, . . . showing a completion of the invention . . . prior to the date of the amendment . . . The sole issue in the case is whether, in view of the references disclosing the use of hydrocarbon oil in the forward run cycle for the purpose of enriching the gas it would involve invention to substitute such oil for . . . coal in the back-run cycle in order to secure a gas of increased . . . coal and oil are no more equivalents in the manufacture of carbureted water gas, than in many other of the variety of uses." *Willien*, 24 U. S. P. Q. 212.

“Burt hit upon the idea of freezing the stick in the ice cream, that is, by inserting the stick in the cream before freezing and then subjecting the mass to refrigeration. His experiments demonstrated that such a process created the desired union between the cream and the stick. The product was placed upon the market and has been a great success. . . . Has not been anticipated by lollipops . . . valid.” *Popsickle Corp. v. Weiss*, 40 Fed. (2) 301, 302.

“A use is public though the invention cannot be learned unless the embodiment of it is destroyed.” *Grasselli Chem. Co. v. National Aniline and Chem. Co.*, 26 Fed. (2) 309.

“The proof is ample that it was used for vulcanization in large quantities before December 31, 1913, in the factory of the Diamond Rubber Company and that tires were made of the product and sold. This was the only kind of use possible and it was public. . . . Once the invention has been embodied in goods which are put in public use it becomes impossible for a later inventor to secure a patent.” *Grasselli Chem. Co. v. National Aniline & Chem. Co.*, 26 Fed. (2) 308, 309.

“Much time and space have been devoted to an effort to establish ‘prior use’ in Germany. Since such prior use, if established, would be no defense, under Section 4923, it is difficult to understand why the record is thus encumbered.” *Badische Anilin and Soda Fabrik v. Kalle and Co.*, 104 Fed. at 806.

## II. Of Prior Experiments

“Mere conversations about the practicability of an improvement or suggestions as to the manner in which it might be carried out or accomplished, will not of themselves defeat the claims to originality of him who perfects the idea and secures a patent. Neither will experiments defeat, even if known to the patentee, if it appear that he prosecuted such experiments to final success; but any in-



formation to a patentee, sufficient to enable him to construct the thing itself, would destroy the originality of the invention. . . . That knowledge . . . should be sufficient of itself to enable the party to whom it was imparted to construct the improvement." *Judson v. Moore*, 1 Fish. 544.

"If the acids were accidentally and unwittingly produced, whilst the operators were in pursuit of other and different results, without exciting attention and without its even being known what was done or how it had been done, it would be absurd to say that this was an anticipation of Tilghman's discovery." *Tilghman v. Proctor*, 102 U. S. at 711, 712.

"All that was done by others may be properly classified among unsuccessful experiments. However suggestive they may have been they cannot be made available to defeat a patent granted to an inventor who . . . reduced his idea to practice, and revealed to the public a useful process, which the crude and fruitless experiments of others had not made known." *Roberts v. Schreiber*, 2 Fed. at 864.

"About 150 of these insulators were made . . . but only a few were delivered. . . . The rest were never put in use or sold . . . ultimately broken up. . . . At all events, it was not followed up . . . it did not produce a glaze-filled insulator. . . . This unsuccessful and abandoned experiment does not operate as an anticipation." *R. Thomas & Sons Co. v. Electric Porcelain & Mfg. Co.*, 111 Fed. at 927.

"Standwood . . . succeeded in obtaining a liquid glue in small quantities. But . . . of inferior quality, and his customers finding fault with it, he abandoned his attempts. . . . Everything done by Stanwood prior to the Rogers' patent was merely experimental." *Gloucester Isinglass & Glue Co. v. Brooks*, 19 Fed. at 427.

"The experiments made by Hawes . . . closely resembled the process described . . . but . . . resulted in

nothing practical . . . the manufacture was soon abandoned, and it may properly be considered an abandoned experiment." *Smith v. Goodyear Dental V. Co.*, 93 U. S. at 498.

"The patent of an originator of a complete and successful invention cannot be avoided by proof of any number of incomplete and imperfect experiments made by others at an earlier date. This is true, though the experimenters may have had the idea of the invention, and may have made partially successful efforts to embody it in a practical form. And though this doctrine has been more frequently asserted when patents for machines have been under consideration, we see no reason why it should not be applied in cases arising upon patents for chemical products." *American Wood Paper Co. v. Fiber Disintegrating Co. (Wood Paper Patent)*, 23 Wall. 594, 595.

"McManus, . . . experiments were abandoned, because his various ideas proved to be impracticable. He tried a cement which included an albuminous material as one of several ingredients. . . . At best, McManus may be assumed to have used some unknown proportions of albumen. But the outstanding fact is that he was engaged in the same art and desired the same result . . . but was unsuccessful. His ideas produced no forward step in the art." *International Cork Co. v. New Process Cork Co.*, 6 Fed. (2) at 424.

"Whatever Dr. Fink may have done was for no other purpose than that of experimentation. Nothing useful seems to have been accomplished by him." *General Electric Co. v. Nitrogon Electric Co.*, 292 Fed. at 386.

"We cannot meet an invention by art which suggests a line of tests, some of which experiment later shows would produce the result, and some of which similar experiments show would not." *Diversey Corp. v. Mertz*, 13 Fed. Supp. 412.

"The invention was not in the experimental stage, if by that is meant that the inventor was testing it with an

eye to perfecting it. His work was done. . . . The very substantial shipments . . . were in the ordinary course of business . . . they were for profit, the customer was not advised that they were experimental. The new process was used indiscriminately with the old." *Aerovox Corporation v. Polymet Mfg. Corporation*, 20 U. S. P. Q. 121.

"The closest prior patent is . . . to Millard. . . . Since the alleged novelty of Hall's invention rests solely on grooving the stone . . . and since he claims no specific dimensions for his grooves it is apparent that he might utilize the same grooves as Millard. . . . Hall . . . adds nothing to the teaching of Millard . . . except to explain that grooving is advantageous." *International Burr Corp. v. Wood Grinding Service, Inc.*, 2 U. S. P. Q. 437.

"If the patents disclose anything not previously described in the prior art, it is something that nature made and was used in the prior art without mention. The story as to details of temperature, and all that was told in the prior art. . . . We should not think of this as an art particularly and solely relating to the diphenyl molecule. It is the chemical art . . . They were dealing with an art in which it was well known that such vapors must be heated as uniformly as possible . . . must be cooled rapidly." *Swann Research Inc. v. Dow Chemical Co.*, 28 U. S. P. Q. 25, 26.

"It is not explained why it installed the Grosvenor process if its prior kilns and processes were capable of accomplishing the desired result. It is also significant that . . . did not itself apply for a patent to cover its asserted improvement. It experimented for many years, and, though some progress was perhaps made, yet it never produced or adapted a completed process for accomplishing the result. In the patent law it is well settled that to anticipate a patent by a prior use there must be proof beyond a reasonable doubt that the device was completed, and not merely left in an experimental or

untried stage.” *Wenborne-Karpen Dryer Co. v. Cutler Dry Kiln Co.*, 285 Fed. at 76.

“These prior patents, none of which solved the problem of machine-drawn window glass, should have no effect in anticipating, qualifying, or defeating the claims for patent protection of those whose subsequent effort actually produced machine-drawn window glass. Nor should these earlier, but abortive attempts which resulted in absolutely nothing, shield and protect from infringement and accounting those who copied not the abortive failures, but the successful steps of the originators of machine-drawn glass.” *Consolidated Window G. Co. v. Window G. Mach. Co.*, 261 Fed. at 368.

“If the use of this remover was abandoned because unsatisfactory by reason of its offensive smell or effect on the workman, or for any other reason, it was an abandoned experiment, and could not be a valid anticipation. . . . On the question being repeated to him, he says they might have left out the fusel oil and used only benzol and alcohol, but he cannot recall positively. It is obvious that this kind of testimony falls far short of the standard required. . . . Counsel for defendants argue that a single prior use is sufficient to avoid the patent, but this claim must be taken with much allowance in view of the rule as to abandoned experimental uses.” *Chadeloid Chemical Co. v. F. W. Thurston Co.*, 220 Fed. at 690.

“The patentee . . . admits . . . that the formulae of Eberson correctly describe the claims in suit. . . . But he contends that Eberson has never produced a remover in accordance with such formulae, and, further, that his commercial production was inoperative, impracticable, and in fact was abandoned. I am not satisfied by the evidence that a practicable remover capable of operation and like the invention in suit was manufactured or sold by Eberson. . . . Even though the testimony of Eberson is elaborately given and in some respects corroborated . . . it does not belong to that high class of evidence

which the law requires to invalidate a patent by antecedent use." *Chadeloid Chemical Co. v. Frank S. De Ronde Co.*, 146 Fed. at 992, 993.

"What more does the patent disclose than was there known and pursued? As to the proper proportions . . . the patent is silent. It gives no instructions whereby the excessive employment of the enriching agent may be avoided. Nor can the transaction at Beaver Falls be deemed as unsuccessful and abandoned experiment. . . . An illuminating compound . . . was there actually produced, and for a long time was extensively used. The cessation of the use was not because the process was impracticable, but . . . the compound gas burned with a smoky flame." *Smith v. Pittsburgh Gas Co.*, 42 Fed. at 152.

"The invention consisted in merely applying to practical uses facts that were known scientifically, but never before thus applied. . . . The Tesla invention in issue . . . derives its . . . recognition from the fact that it was applied to the production of power." *Westinghouse Elec. & Mfg. Co. v. Stanley Instrument Co.*, 133 Fed. at 169 and 184.

"Mr. Fuller . . . said that nothing practical came of the experiment. Clearly this is not sufficient to constitute an anticipation. . . . Article by Professor. . . . The Professor was experimenting on a small scale. . . . This article held out little promise of success that any success could be attained along the lines which the patentee in the patent in suit subsequently followed. . . . There was no disclosure of method or apparatus, and the conclusion he reached was the opposite of that for which the patentee of the patent in suit contended. . . . This did not . . . constitute an anticipation." *Electro-Bleaching Gas Co. v. Paradon E. Co.*, 8 Fed. (2) 893, 895.

"Kratz, with a chemistry degree . . . read a paper upon accelerators before the American Chemical Society . . . placed a table upon a blackboard giving the com-



parative powers of D. P. G. . . . and other accelerators. . . . Nor is the claim of abandonment to be established by pointing to the fact that no use of D. P. G. followed Dr. Kratz disclosure. . . . D. P. G. was not used . . . because no method was known for its cheap manufacture. . . . The reason for nonuse prior to plaintiff's method patent fully appears." *Dovan Chemical Corp. v. Corona Cord Tire Co.*, 10 Fed. (2) at 599, 600, 602.

### III. Prior Analogous Miscellaneous Steps

"If an old device or process be put to a new use which is not analogous to the old one, and the adaptation of such process to the new use is of such a character as to require the exercise of inventive skill to produce it, such new use will not be denied the merit of patentability. That, however, is not the case here, since the Cowles process had been substantially used by Holmes for the same purpose of insulating an electric wire, and the discovery of its incombustible feature involved nothing that was new in its use or method of application." *Ansonia Brass & Copper Co. v. Electrical Supply Co.*, 144 U. S. at 18.

"Pindstofte's process is identical with that of Wagner; the only observable difference being that Wagner describes the movement of the receptacles containing the beer as 'continuous,' while Pindstofte describes the movement of the receivers by his process as passing slowly through the water bath from one end to the other. . . . It is not necessary, in determining the question of anticipation, that the process should be identical in all particulars. It is sufficient if in general aspect the two processes are the same, and the difference in minor matters is only such as would suggest themselves to a person possessing ordinary skill in the art. . . . These patents . . . were machine patents. . . . A full and complete answer . . . is that . . . they fully disclosed the process, and upon the issue of the patents such process was published."

Model Bottling Macsh. Co. v. Anheuser Busch B. Assn., 190 Fed. at 579.

"The cooling of a warm substance while being carried on an endless conveyor through a cold compartment was old. . . . For cooling chocolate . . . cooling candy . . . cooling soap. . . . These are enough to show that the hardening of ice cream as the defendant does it was but the adaptation of such well-known devices and the use of lower temperatures." *Vogt Instant Freezers v. New York Eskimo Pie Corp.*, 21 U. S. P. Q. 134.

"Considering what was well known in the wood-treating art and the practices already in vogue with reference to baseball bats, we do not think there was invention either in using an adhesive, specifically casein glue, to toughen the surface of the bat, nor in confining it by well known practices to the portions of the wood desired to be affected." *Hanna Mfg. Co. v. Hillerich & Bradsby Co.*, 26 U. S. P. Q. 202.

"The method merely involves a more frequent and desirable use of an old side arm or distributing machine which previously had been used infrequently in road construction. . . . The avoidance of ruts in the road section being treated with asphalt, which is the novel and useful feature . . . is the natural and necessary result of the use and operation of the side arm distributing machine, and does not impart patentable novelty to the method." *MacDougal Const. Co. v. Finley*, 38 Fed. (2) 810.

"The former process used in canning kraut . . . the material as removed from the large vats was in a matted condition . . . by introducing this matted fibrous material into a bath of hot liquid, the fibres tend to separate quickly. . . . The patent to Dunkley . . . the material in bulk is introduced into a bath of hot liquid because . . . There is no statement as to the character of the materials. . . . It was not obvious that Dunkley's process as thus slightly changed would give [with kraut] the advantages." *Hansen*, 4, U. S. P. Q. 381, 382.

“The echo method of determining distances under water was not new with Fessenden . . . Fessenden discovered that the identity in time, character and frequency set up between sound waves and electric undulations enabled him to dispense with all apparatus except electrical ones. He produced a sound electrically, and he received the echo by an electrical instrument . . . do away with all extra devices for selecting the required sound from others, such as the noise . . . within the body of a ship. The apparatus was quite different from anything known in the prior art.” *Submarine Signal Corp. v. General Radio Co.*, 14 Fed. (2) 180.

“The claims call for a method of cleaning and whether greasy tin plates, pans, dishes or films are to be cleaned seems to us not material. Certainly to emulsify the grease on an article and rinse the same in clear water is common practice in cleaning grease therefrom, and whether the articles are squeezed or passed through brushes or dried and polished by rubbing against cloths, or other means, seems immaterial. Appellant has failed to set forth any special advantage in the squeezing action recited. . . . The examiner has taken the stand that inasmuch as appellant has acknowledged that it is old to tin a plate and to oil a freshly tinned plate and then remove the oil either by hand scrubbing or by branners, appellant’s invention, if any, resides in cleaning the plates per se. For this reason he has rejected the claims in view of Olson and Vose et al. together with everyday knowledge of washing any greasy articles. . . . In view of the fact that the rejected claims are now limited to the manufacture of tin plate, the question is whether the art referred to is an appropriate art in the rejection of such claims. Whereas it might appear to be an obvious expedient to employ a method of cleaning which is very similar to that shown in the above art, we are convinced by the showing before us that it has not been as obvious as might be expected to the experts in the art of tinning sheet plate. It seems

to be definitely shown that the art employed a much less satisfactory method of cleaning freshly tinned plate and that the new process is at least new in the manufacture of tin plate and has now been quite generally adopted. With this view of the situation in the tin plate art the question of obviousness is not as clear as presented by the examiner and we feel constrained to allow the claims over this art." Zimmerman, 14 U. S. P. Q. 44, 45 and 46.

"The process of coloring a light colored metallic matrix adapted for line casting machines . . . including treating said edge . . . to make the same dark or black and thereafter filling in the indented indicating character with a lighter colored or white pigment. . . . Even if . . . it was common practice long prior to Hill to darken brass and fill in indented . . . with white . . . yet invention may reside in the conception of the idea for remedying defects and in the valuable result." Matrix Contrast Corp. v. Kellar, 2 U. S. P. Q. 400.

"A coating forming a background of non-lustrous coloring material, a flexible cloth netting is then wrapped . . . and a coating of lustrous coloring material is sprayed onto the body through the netting. The netting is then removed. . . . Appellee insists . . . that patentable novelty did not reside . . . in the process for making the bait. . . . The use of netting and flexible stencils in the decorators art was to produce on lamp shades etc., designs that were attractive to the eye and artistic. . . . This merely reproduced. . . . Dills, however was not interested in reproduction. . . . He wanted a new product . . . a simulated fish scale. He was not interested in the size, shape or attractiveness of the original flexible stencils or netting." James Heddons Sons v. South Bend Bait Co., 14 Fed. (2) 806.

"The simultaneous photographing of sound and picture records was not novel, separate development of the negatives was well known, the advantage of uniting two records, sound and picture, on a single film was well

known and the method of uniting two photographic picture records by printing them from the separate negatives was well known. . . . It required no more than the expected skill of the art of photography to use an old method of printing photographically the two negatives upon a single positive." *Paramount v. American Tri-Ergon Corp.*, 294 U. S. 472, 473.

"The claims . . . are . . . ' . . . consisting of moulding two complete coping sections together in a single article, drying and baking said articles, and finally severing . . . ' . . . The 'method' . . . was old in the art, having previously been applied to other clay products, such as sewer pipe, tile and angle brick." *Francy v. Empire Fire Clay Co.*, 47 Fed. at 313, 314.

"A change in the mode of cooking the meat from broiling, roasting or steaming to boiling, all the other parts of the process remaining unchanged, cannot be called invention." *Wilson Packing Co. v. Chicago Packing & Provision Co. (Packing Co. Cases)*, 105 U. S. at 571.

"The use of water upon a saw or cutting tool, to lubricate it, diminish friction and consequent heat, is old. . . . It has been previously applied to sawing knife-handles of celluloid. . . . The complainants seek to uphold the patent . . . on the ground that new results are accomplished by the application of this process to the manufacture of combs from celluloid. . . . We are unable to discover . . . such new results . . . as would warrant . . . sustaining the patent." *Celluloid Mfg. Co. v. Noyes*, 25 Fed. 319, 320.

"As . . . Smith has invented no new process or machinery; but has only applied to palm leaf the old process, and the old machinery used to curl hair, it does not strike me, that the patent is maintainable." *Howe v. Abbott*, 2 Story 190.

"Werk's patents meet a fatal obstacle. . . . Werk's use of horse hair mats in the present practice of cotton-seed oil extraction was but a revival of an old and well recognized use of the horse hair appliances in the gen-



eral art of oil extraction." *Werk v. Parker*, 231 Fed. at 124.

"I am unable to find any invention, or any new and unobvious result, in running liquid white dope through an atomizer, instead of liquid white paint; the dope being as free to use by the world as paint." *Lionne Co. v. Cushman-Hollis Co.*, 299 Fed. at 988.

"Knowing just how patterns covered with wax, set or semiset, or with paint, dry or semidry, could be lifted from the glass so as to limit the effect of the sand blast . . . Evans cannot be credited with invention because his pattern is covered with glue, and when lifted leaves a like outline and limitation." *Evans v. Suess Ornamental Glass Co.*, 86 Fed. at 782.

"It does not amount to invention to discover that an old process is better in its results, when applied to a new working, than would have been expected, the difference between its prior working and the new working being only one of degree and not one of kind. . . . The public cannot be deprived of an old process because some one has discovered that it is capable of producing a better result, or has a wider range of use than was before known." *Lovell Mfg. Co. v. Cary*, 147 U. S. at 634.

"The claims of the plaintiff are void for want of invention in that they purport to cover only the use of an old device for accomplishing by machinery the same pressure and rubbing which was formerly effected by hand." *Matteawan Mfg. Co. v. Emmons Bros. Co.*, 253 Fed. at 376.

"The evidence shows that long prior to the alleged invention blank key-boards had been covered with continuous sheets of veneer covering several keys. . . . The use of celluloid and similar substances for covering keyboards was known . . . the usual method of covering was to use one or more separate pieces of the veneer for each key. . . . It was difficult to obtain sheets of ivory of uniform quality, and of the size requisite to cover the whole keyboard, and

therefore, in covering with ivory, the better method was to cover each key by a separate strip of that material. The inventor observed that narrow strips of celluloid were likely to warp, and therefore he adopted the other well known method, which consisted in using a continuous strip. We see here no patentable invention." *Celluloid Mfg. Co. v. Tower*, 26 Fed. at 452, 453.

"In view of the fact that they used the very method of the patent for marking names, numbers, descriptive words, and large-figured decorations upon water jars, filters, crocks, etc., there remains only the question whether there was any invention in applying this same method to stamping more elaborate decorations upon smaller and thinner stoneware—the mechanical difficulty of the stamping operation being somewhat increased by the more fragile character of the ware, thus requiring a greater elasticity in the backing of the rubber stamp. We think there was . . . no invention." *Young v. Burley*, 200 Fed. at 262.

"While the complainant's so-called invention was in its experimental stage, he went to two practical japaners, and they at once readily and successfully accomplished the feat, and in doing it merely proceeded as they were accustomed to proceed in jappanning numerous other articles. There was no invention . . . in applying this time-worn method to bamboo sticks." *Eisenstein v. Fibiger*, 160 Fed. at 688.

"What Siemund did does not rise to the dignity of invention. The prior art shows all that he shows except perhaps, the adaptation of the process, assuming it to be workable, to overhead welding." *Siemund v. Enderlin*, 212 Fed. at 412.

"Water acts as a paint repellent in all these instances, by intervening a thin film of non-adhesive material between the rollers and the paint, or the resinous or glutinous coating, of the fabric. Consequently, it would not be invention to apply water by the same mechanical means

to prevent the paint of wirecloth from adhering to the rollers which had been used to apply it. . . . Unless the process of the patent involves something more than the use of simple water to moisten . . . it is destitute of patentable novelty." *Wickwire v. Wire Fabric Co.*, 41 Fed. 37, 38.

"The same method of ejecting substances out of presses—by successive charges of material behind—has been in use time out of mind. The presses for peat and brick, exhibited by the defendants, show it. That the substances were not hay, baled or unbaled, is not important. The *method* was the same." *Dederick v. Cassell*, 9 Fed. at 312.

"What more did they do, at most, than to apply a process of stamping tobacco, which was already well known, to the same tobacco at a later stage in the process of manufacture? . . . 'The application of an old process or machine to a similar or analogous subject, with no change in the manner of applying it and no result substantially distinct in its nature, will not sustain a patent, even if the new form of result has not before been contemplated.' . . . The principle involved . . . is fatal to the patent." *Miller v. Foree*, 116 U. S. at 27.

"All of complainant's process, excepting his preliminary roasting of the bean, had been for a long time a well known and generally practiced method of separating wheat from its accompanying chaff. . . . As the coffee bean could not be ground in its green state it was a most obvious conception to roast or otherwise dry it before attempting to grind it." *Baker v. F. A. Duncombe Mfg. Co.*, 146 Fed. at 748.

"The opinion of the circuit court says: '. . . Does it constitute invention to stir, by a well known and simple mechanical device, what had before been stirred by hand? . . . The complainant's claim to be enrolled upon the list of inventors is based upon propositions too theoretical and visionary for acceptance.' A careful consideration

. . . induces us to concur." *Marchand v. Emken*, 132 U. S. at 198, 199, 200.

"The only process that is embodied in the plaintiff's apparatus is the process of bringing the heated products of combustion, impelled by a blast of heated air rushing through the fire built upon the grate, into direct contact with the interior of the cask, and with the pitch which may cover the interior. . . . The process of the Seibel apparatus is the same as that of the plaintiff's. . . . The fact that in the plaintiff's apparatus the furnace is not thrust into the cask, and that the products of combustion are conducted into the cask through a pipe, does not affect the question of the process." *Crescent Brewing Co. v. Gottfried*, 128 U. S. at 166, 167.

"To take a process so generally known as this in its application to india rubber and gutta percha, and apply it to the gum chickly, is not invention; and the result obtained, to wit, a gum more free from soluble matter and impurities than the chickly . . . is nothing new." *Adams v. Loft*, 4 Ban. and A. 495.

"It was old to use dies to compress and finish other plastic material . . . and to use them in making articles of harness trimmings, in order to compress plastic material upon metal cores. . . . It is obvious that no inventive faculty was involved in the conception that dies could be efficiently employed to mould, compress, and finish vulcanized gums into articles of harness trimmings, or that dies could be constructed with recesses adapted to give such articles any desired form." *Rubber and Celluloid H. T. Co. v. India Rubber C. Co.*, 35 Fed. at 500.

"It is insisted that the process was never applied by the witness to the preservation of fish and meats. The answer is that this was simply the application by the patentee of an old process to a new subject, without any exercise of the inventive faculty, and without the development of any idea which can be deemed new or origi-



nal in the sense of the patent law.” *Brown v. Piper*, 91 U. S. at 41.

“When, as here, after repeated unsuccessful efforts on the part of others, the plaintiff, solely as the result of applying the process of the patent in suit, has been able to produce a product which entirely fills the long felt want of a leather substitute, especially in the manufacture of shoes, such success may well be considered as evidence of invention in the discovery of the process as opposed to the skill of the mechanic.” *Respro Inc. vs. Vulcan Roofing Co.*, 15 U. S. P. Q. 240.

“Before that date detachable reservoirs were in use in connection with street lamps, and which were taken from the lamp post to a store-house to be filled and returned. It may have been a valuable improvement in the method, but it was not invention, to utilize the already known plan of having more than one reservoir, so that, when the empty one was removed, it could be replaced with another, filled and ready for use.” *Sun Vapor Street Light Co. v. Western Street Light Co.*, 48 Fed. at 683.

“It is . . . obvious that Clark’s patent was not a complete anticipation . . . yet we think it was too close for patentable distinction. . . . Crump impressed the size or ink of the pattern on the face of the paper . . . and then sprinkled the resin over that, while Clark pressed the size through the fabric, so that it would combine with the resin beneath.” *Embosco Sales Co. v. Wood, Nathan & Virkus Co.*, 247 Fed. at 341.

“With the increase in the diameter of a cylinder from inches in the hand-blown method to feet in the machine-drawn method, it became difficult or impossible to flatten cylinder sections into single sheets without providing larger ovens. . . . The patentees cut the cylinder to fit the oven just as a tailor cuts the cloth to the garment. . . . The cutting . . . was . . . but a natural development . . . the patent was void.” *Window Glass Mach. Co. v. Pittsburgh Plate Glass Co.*, 284 Fed. at 658, 659.



“The pavement consists essentially of two parts, viz., a base of concrete of such strength and rigidity as to be laid directly on the soil, and a surface layer of substantially pure bitumen of one-eighth to one-quarter of an inch in thickness. . . . When Hubbell’s cement has ‘well set,’ he declares: ‘I slush its surface with thin hot bitumen.’ . . . Hubbell anticipated Schutte.” *Barrett Co. v. Ewing*, 242 Fed. at 512, 514.

“The only improvement over the former primitive mode is found in the use of the funnel-shaped tube. The yarn had previously been held by a hand of flesh and blood. . . . Undoubtedly its introduction into this art was an improvement. . . . It might be said that the use of a convenient apparatus for holding the yarn tightly compressed while it is being tied would be obvious to the skilled mechanic. . . . In view of what was known in the manufacture of balls and tufts . . . it cannot be said that Boehme contributed any patentable improvement . . . by taking a hemp condensing tube and using it thereafter as a yarn condensing tube.” *Rochester Coach-Lace Co. v. Schafer*, 46 Fed. at 192.

“The dies for the Cohn stay are the same as for the Sherwood stay, except that the die for the cross cut is placed very near the die for the longitudinal cut. The principle or the method of the so-called Henius process was easily suggested by the Cohn tools. . . . In view of the previously known process for making the Cohn stay, there was no invention in the process for making the Sherwood stay.” *Henius v. Lublin*, 30 Fed. at 839.

“The only novel feature which the patentee claims to have introduced consists in so arranging the various operations that the same movement of the die cuts the letter out, and presses it upon the surface where it is to be affixed. It would seem not to require the exercise of any inventive faculty to devise such a process; . . . a similar synchronizing of movement and function was well known in the art of inlaying wood . . . and of cutting

labels out of printed or lithographed sheets and affixing them to the ends of bobbins . . . it is difficult to find in the process . . . invention sufficient." *Schwartz v. Housman*, 88 Fed. at 522.

"That there was nothing broadly new in removing foreign matter from a fluid or plastic substance by straining, I take to be of common knowledge. That there was anything broadly new in doing the same thing by forcing the fluid or plastic substance to be cleaned through mechanical strainers would be in any case hard to believe. . . . United States patents . . . to . . . each . . . covers a machine for forcing clay in a plastic state through a strainer . . . to remove foreign matter. . . . I do not see how it can be said that there was invention in using the same method to clean rubber or substances similar or analogous thereto." *Cowen v. Boston Woven Hose & Rubber Co.*, 214 Fed. at 808.

"To singe after the fast black has been produced impairs the color, . . . it would be absurd to singe before the green stage has been reached, because the process of dyeing the stocking inevitably results in producing more fuzz, and this would need to be singed off by a second operation. To perceive this fact seems . . . not to require the exercise of the inventive faculty." *Sarfert Co. v. Chipman*, 181 Fed. at 526.

#### **IV. Prior Analogous Mechanical Steps**

"There is certainly a close resemblance between the Bundy dies for making lead balls and (apparently) their mode of operation, and the Simond's dies for forging balls and their operation. But . . . Bundy makes only leaden bullets. Simonds forges . . . from a heated metal blank. . . . We are not prepared to say that the cutting and molding of the cold lead by the Bundy dies is the same as the spreading and compacting of the hot metal by the Simonds forging dies. . . . The doubt must be re-

solved in favor of the successful patentee, who has in a practical way advanced the art. . . . It appears that dies with Bundy corrugations would be inoperative for forging hot metal. . . . We do not find in the Bundy patent a description of the Simonds method." *Simonds Rolling Mach. v. Hathorn Mfg. Co.*, 93 Fed. at 961, 962.

"The patent to Tellander taught that hollow articles might be cast in metallic molds having a metallic core so that their surfaces would be smooth and hard. . . . The patent to Tellander was issued in 1881. . . . It seems strange . . . that those skilled in the art should, for many years, resort to the expensive operation of machining in order to secure accurately engaging surfaces of manhole cover seats and covers, if appellant's claimed processes and product were obvious. . . . Patentable." *Merriman*, 24 U. S. P. Q. 293.

"The invention relates to a method of cutting scroll edge metal blanks from which a series of can ends can be cut. A sheet of metal is fed forwardly through a cutting machine a distance sufficient to contain two rows of can ends. The die is then operated to cut a blank having a long and a short adjacent section with opposite scroll edges and the waste metal at the ends of the short-section removed. . . . Rudolphi . . . does not disclose a method wherein blanks of a width of two rows of can ends are cut. . . . Applicant asserts . . . a considerable saving of metal . . . patentable. . . ." *Murch*, 20 U. S. P. Q. 311.

"Claims 1 . . . 11 all relate to a method or the package which calls for a separate gaseous envelope or gaseous atmosphere around the small cuts of cheese. *Stevensen* taught the presence of an inert gas such as carbon dioxide or nitrogen . . . the . . . claims are so broad as to read upon *Stevenson*. . . . Claims 18, 19, and 20, however, call for the presences of atmospheric air . . . said claims 18, 19 and 20 possesses inventive novelty." *Doane*, 25 U. S. P. Q. 401.

“The improvement . . . in the Ballou safety pin tongue was due simply to the superior manner in which the machine hammer dies of the swaging machine performed the old operation of hammering and condensing the metal . . . superior performance . . . of work that . . . had been performed less perfectly by hand.” *Ballou v. Potter*, 110 Fed. at 970.

“The invention covered by two claims relates to the method of producing a uniformly accurate round shaft, consisting in first forging a bar by hammering and pressing to approximately final form and dimensions, and imparting to the interior of the bar desirable structural characteristics, and then finally shaping and polishing said bar into final shape by rotating it in opposed oblique rolls. . . . These patents, however, do not show the initial step of forging the bar to approximately its final form before subjecting it to the rolling operation. Each of these patents describes the blank as having been rolled to its approximate shape before being subjected to the action of the final finishing rolls. The Examiner cited the patent to Schwab as showing a process for producing axles or other cylindrical members in which the blank is first rolled and then forged. This patent, at best, is a reversal of the steps of appellant’s process and would not result in the article produced by appellant’s method. That it would suggest appellant’s method does not appear probable in view of the fact that said patent issued in 1898 and the method covered by the claims, so far as the art recited by the examiner discloses, is novel.” *Kamp*, 18 U. S. P. Q. 78.

“The use of dies with different shapes with which the pressed metal is bound to conform is old. The only thing that is new is . . . that people began to use old processes in order that old wheels may be renewed and subjected to a longer life. The treatment of worn out car wheels was a mere step in the art of subjecting metals under pressure to force them to reach the desired dimensions. That such

treatment has resulted in great economy should not control the judgment of the court upon the question of invention. . . . Invention is not found.' " Hansen v. Slick, 230 Fed. at 636.

"Manhes used the same process in converting copper matte into commercial or pig copper that Bessemer many years before had used in the conversion of molten iron into steel. . . . I hold that both claims of the patent in suit are invalid." Farrell v. Boston and M. Consol. Copper and S. Min. Co., 121 Fed. at 844, 847.

"The process which he evolved may be a simple one—merely casting a bit of aluminum into the molten mass at the moment of pouring—but it is not to be judged by its simplicity, but by its effect. . . . The analogies are not so close between nickel and cobalt on the one hand and iron on the other that the metallurgical treatment found efficacious for the one can be extended to the other without investigation, leaving room for inventive discovery such as we have here." United States Mitis Co. v. Midvale Steel Co., 135 Fed. at 108, 110.

"It was old at the time these inventors entered the field to heat the joints for the purpose of making them receptive of the solder, the only element left in the complainant's patent, wherein it differs from the older devices for producing the same result, is that, instead of heating the joint to such an extent as to cause it to melt cold solder or drop solder, or solder wire placed in or around the joint, and instead of turning the heated joints in a groove filled with melted solder, these patentees pour hot solder around the heated joint. . . . There is no invention." Adams and Westlake Mfg. Co. v. Wilson Packing Co., 21 Fed. at 650.

"If the method of assembling and fusing plates of unusual length at their meeting edges discloses nothing of novelty except in degree, and therefore nought of invention, it is difficult to see invention in the avoidance of cir-



cumferential seams." *A. O. Smith Corp. v. Petroleum Iron Works Co.*, 24 U. S. P. Q. 187.

"The matrix . . . preferably made of rubber . . . is laid upon its back and the inlay cavities filled . . . with cementitious material. Over the surface of the inlays is placed a backing . . . cementitious material. . . . After hardening by setting the unit and matrix are inverted, and the matrix is easily peeled. . . . Mercer disclosed a matrix made of . . . gelatin. . . . We are unable to discern anything disclosed by Boynton which was not taught by Mercer." *Boynton v. Chicago Hardware Foundry Co.*, 26 U. S. P. Q. 30, 31.

## **V. Prior Analogous Chemical Steps**

"Ordinarily the reactions and phenomena of chemistry may sometimes dictate a rule as to equivalents, which is at variance to that rule as applied to mere physical or mechanical equivalents; but it is only when the reactions and phenomena of chemistry are latent and undeveloped that this rule has application." *De Lore v. St. Louis Lithopone Co.*, 26 Fed. (2) 868.

"The nature and use of the reflux action is well known. . . . Appellant has merely applied a process, or a step of a process, well known in the chemical art, to a different chemical, which, in our opinion, did not involve invention." *Foster*, 32 U. S. P. Q. 56, 57.

"We are not seriously impressed by the prior art disclosed in spray drying milk, blood, sulphite liquor, etc. . . . The practices disclosed in the so-called prior art were in different fields, in most instances in a non-analogous art where radically different problems were presented." *Colgate-Palmolive-Peet Co. v. Lever Brothers Co.*, 33 U. S. P. Q. 304.

"There seems to be no questions that reducing atmospheres are well known in electric welding. . . . None of the patents cited discloses the advantages which flow from

the use of hydrogen in the particular form of welding. . . . The speed of welding here is very much greater. . . . Oxidation is prevented and the weld is much more ductile. . . . No matter how obvious it may be to perform a certain operation, if some new and unobvious result occurs in doing this the new method of doing this is patentable if the improvement is of sufficient importance." Alexander, 4 U. S. P. Q. 155.

"The Ornstein patent is for a process of antisepticizing water by means of providing a minor flow with an extended film-wise surface at one point in its path at which point the flow contacts a regulated predetermined amount of free chlorine gas. . . . The Woolf patent . . . consists of a device for passing a flow of sea water between plates or electrodes to be electrolyzed before its discharge into the brook or stream to be treated. There is not the remotest suggestion of how free chlorine gas could be practicably and scientifically used." Electro Bleaching Gas Co. v. Pascoac Water So., 4 U. S. P. Q. 228, 229.

"The Brooks disclosure is sufficiently broad to teach the practicability of using all the chemicals whose use is called for by appellant, and neither, Brooks nor appellant teaches the use of any specific quantity or quantities in any manner which distinguishes the one from the other. At most the difference lies only in the results respectively claimed, Brooks claiming only a color stabilization result and appellant claiming only a gum foundation inhibition. . . . Patentability may not be determined simply upon the differences in results claimed." Burk, 23 U. S. P. Q. 281.

"The patent . . . sets forth no patentable invention or discovery. The drying of the grains was necessary, and an old practice. Expelling the solvent from a substance by heating it in water had been practiced in other parts before the date of the appellant's patent." Wolff v. E. I. Du Pont De Nemours and Co., 134 Fed. at 866.

"The application of artificial heat to impart age to wines was . . . old. The heat was applied to the wine

from the outside. The new process claimed in the patent is to introduce the heat by causing steam, or other heating medium, to pass through metallic pipes or chambers . . . within the body of the wine in the cask. . . . The effect or result is the same as that produced by imparting the heat to the wine from the heated air. . . . There was no novelty in the process as a patentable process." *Dreyfus v. Searle*, 124 U. S. at 63.

"The idea of obtaining gasoline from natural gas under pressure was not new . . . and the pressure only affected the quantity of gasoline produced, which fact was well known. . . . Saybolt discovered nothing new; . . . he simply applied an old and well-known process to a new use, which produced no new result or an old result in a better or easier way. It is not a patentable invention." *Standard Oil Co. v. Oklahoma Natural Gas Co.*, 284 Fed. at 474, 478.

"The plaintiff . . . discovered that xyloidine, or soluble gun-cotton . . . could be bleached by ordinary bleaching materials. The view urged and admitted, as sustaining the patent, was, that no one could or would have believed, in advance, that it was possible. . . . The fact that bleached gun-cotton had not before been known or contemplated did not make the bleaching of it in that way a patentable invention, in view of the state of the art. What was done was to bleach by a process which acted objectively on the material and left it . . . in a bleached state. The bleaching agent did not form with the material a new chemical product." *Spill v. Celluloid Mfg. Co.*, 21 Fed. at 640.

"The patentee thus says in effect: 'I seek a patent for mercerizing under tension to produce a silky luster. I am aware that mercerizing under tension has been common, but no one has hitherto noticed that a silky luster results. I cannot say how much tension is necessary to produce this luster. It is enough to say that the tension must be sufficient.' This is not to state an invention."

*American Mercerizing Co. v. Hampton Co.*, 147 Fed. at 730.

“Prior to the date of the invention of Holliday it was well known in the art that, owing to the character of un-sulphonated indigo, the coloring matter thereof could not be employed . . . and that the indigo, by being sulphonated, could be converted into new coloring matter, possessing acid properties, and retaining substantially its original color when used in an acid bath. . . . The process for sulphonating indigo was substantially the same as the process of the Holliday patent, disregarding the reference to the degrees Beaume; and the treatment of the rosaniline to render it anhydrous. The treatment of the indigo subsequent to that part of the process which produced the acid solution was different, but probably not substantially so, and that part of the process . . . is not of the essence of the Holliday invention. . . . Holliday was not entitled to make a broad claim for a process of sulphonation.” *Holliday v. Pickhardt*, 29 Fed. at 858.

“This patent cannot be sustained on the ground merely that the production of a pyroxyline compound in imitation of onyx or its production in the manner described in the specification was novel. . . . The properties and characteristics of celluloid and other pyroxyline compounds were understood. . . . It was also known that by the introduction of coloring matter different colors or tints could be imparted to the finished product and that by subjecting, while plastic, two or more sheets or pieces of celluloid different in color or tint to a rolling or other kneading or mixing process the different colors or tints could be blended . . . to present a variegated, veined, mottled or clouded appearance, and cause such product to imitate a variety of natural objects of substances.” *Arlington Mfg. Co. v. Celluloid Co.*, 97 Fed. at 92.

“As the vapor is forced through the catalyst at the prior temperature, a great quantity of heat is created. . . . The Henle article cited as an anticipation, discloses

a laboratory apparatus . . . makes no mention of the absorption of excess heat. . . . While in the Downs converter, after the mercury and catalyst have been raised to the temperature of the reaction, the heat created by the reaction itself keeps the mercury at its boiling point and automatically continues the operation, wherein the boiling mercury acts both as a heating and cooling means." *Barret Co. v. Selden Co.*, 32 Fed. (2) 361, 364, 365.

"It is further contended that the decisions below rest upon two assumptions; namely, first that hydrocyanic acid is a nitrile of formic acid; and, second, that formic acid had all the attributes and characteristics of other members of the fatty acid group, and that, as the other members of the group could be used in the formation of acid amides and nitriles, invention was not involved. . . . Concurring decisions of the Patent Office will not be disturbed unless they are manifestly wrong." *Wietzel*, 39 Fed. (2) 669.

"Their discovery, which is conceded to be valuable and of great benefit, was that the old process of fumigating trees by means of an oiled tent and hydrocyanic acid gas, both of which were old and free to the public, could be made successful 'provided the fumigation is done at night.' Such a discovery, however new and valuable it may be, is not within the pale of patentable inventions." *Wall v. Leck*, 66 Fed. at 555.

"The claims on appeal are directed to a process of oil separation which involves the use of ethylene dichloride as a selective solvent. In general, the procedural steps of the process claimed are old. Like other similar processes, the oil to be separated is treated with a solvent in considerable amount after which the mixture is cooled, whereupon the ethylene dichloride, with the naphthenic materials disclosed therein, will settle to the bottom of the mixture to a considerable extent, whereupon the upper layer, containing a lesser portion of the solvent and the naphthenic bodies, may be separated and utilized as a



machine lubricant. The lower naphthenic layer is said to be especially useful as a transformer oil. . . . Both the Jones patent and the Henderson and Ferris article relate to the dewaxing of oils rather than the separation of the paraffinic and naphthenic constituents of a mixed oil. Jones teaches the separation of wax from a Mid-Continent oil through the use of ethylene dichloride by a procedure quite similar to that employed by appellant. . . . In the present stage of development of the art, it is possible to see a certain analogy between the Jones process and the Ferris process but at the time appellant entered the field, we doubt if such analogy would have been apparent. While the Henderson and Ferris article teaches the equivalency of ethylene dichloride and nitrobenzene in a process for removing wax from oil, we are not satisfied that it has any bearing on a corresponding equivalency of these substances in the Ferris process." Wiles, 33 U. S. P. Q. 395.

"If rice starch is the equivalent of chalk and Boyd reduced his claimed invention of rice starch to practice, before Grupe reduced his claimed invention of chalk to practice, then Boyd anticipated Grupe; . . . If chalk and rice starch are equivalents one of the other, they are in the eye of the patent law the same thing and the two patents issued for that thing closely resemble double patenting. . . . Yet the art is so full of fillers and the idea of fillers has been so long found in the art that we cannot think the disclosure of chalk or rice starch as a filler amounts to invention." Peerless Roll Leaf Co., Inc. v. Lange et al, 20 Fed. (2) 802, 803.

"This is Kissock's practice of obtaining a salt of molybdenum and charging it directly into the furnace except that instead of using calcium oxide alone, it calls for fluorspar and soda ash in addition. The plaintiff meets this patent not by denying that Saklatwalla disclosed the introduction of a salt or oxide of molybdenum directly into the furnace, thus avoiding the intermediate step, but by saying that Saklatwalla did not disclose the 'fixed'

oxide or salt of the Kissock patent to avoid volatilization in the molten bath but that he used it for another purpose, that is, to flux the silicic acid. . . . But if he had the same ingredients that Kissock had and used them in the same way, then, even without a conscious purpose, he patented the same means of fixing." *Kissock v. Duquesne Steel Fdry. Co.*, 4 U. S. P. Q. 71.

"The novelty in the De Bray disclosure, if any, was the suggestion that rectification, as theretofore in use, in numerous industries including the Benzol, Blau gas, and others, be applied to the taming of natural gas gasoline in substitution for weathering and blending . . . It does not show invention to apply an old process to a new subject." *Carbide and Chem. Corp. v. Texas Co.*, 31 Fed. (2) 33.

"Claim 12 brings out that the asbestos fibre acts to reduce the permeability of the melted asphalt and it is not brought out in either of the references that ashes of Brown or the asbestos mentioned in the patent to Gelinek has a function of retarding or reducing the permeable characteristics of the asphalt. It is our view that this claim 12 may be patentable over the art." *Fischer*, 15 U. S. P. Q. 112.

"It seems, therefore, that an enzyme, whose chemical structure, the *Encyclopedia Britannica*, 14th ed., vol. 8, 631, states, 'is not yet known,' is a fermenting agency, and invertase is a species of enzyme. It is present in yeast and yeast is an ingredient used in making the vitamine of the Harris patent. It does not follow, however, that, in the sense of the patent law, simply because both products are present in yeast, one is an anticipation of the other, or that the method used in the production of one is an anticipation of the method used in the production of the other. The brief of appellant contains a comparison of vitamines and invertase tending to show their dissimilarity. . . . No question has been raised as to applicant being entitled to patents upon his claims in both cases, except for the alleged anticipation, and since the articles are

so vitally dissimilar as that the references cited are not regarded by us as anticipations, it follows that, in our opinion, the patents he seeks should issue." In re Wallerstein, 11 U. S. P. Q. 74, 75.

"A method of putting a blue finish upon razor blades as a substitute for blue lacquer. . . . The invention also avoids one step in manufacture polishing. . . . As far back as 1862 Washburn . . . had provided for bluing the metal. . . . The best that can be said for the patent is either that it took some invention to think of coloring blades blue, . . . or that the delay of seven months while lacquer was being used shows that the art did not have the immediate answer. . . . All these considerations make . . . the invention . . . among those step by step advances by which every art progresses without the aid of outstanding ability." Gillette Safety R. Co. v. Triangle Mechanical L. Corp., 32 U. S. P. Q. 531, 532, 533, 534.

"This application relates to . . . treating . . . celery with unsaturated hydrocarbon gas mixed with air. . . . Results in the changing of the green material of the plant or chlorophyll from a bitter material to sugar. . . . It is true that in the treatment of citrous fruits it was obvious to those skilled in the art that the green material contained in the skin was changed to color. . . . There was nothing in this treatment that would teach or suggest that the same method could be employed to convert a bitter substance contained in the edible portion of the vegetable to sugar." Harvey, 2 U. S. P. Q. 212.

"It was a lacquer made with gums or resins, and normally with a softener. Bacon at least had been led away from such a lacquer, as we have just said; he thought that it would not be tough, hard, and adhesive. Whether the art generally supposed so, does not appear, but such a lacquer with great covering power would have got wide acceptance. If Flaherty did no more than disabuse the art of a misconception, it is evidence of originality; most of us persist in what we are accustomed to believe.

Though all he did was to carry forward the existing knowledge that lower viscosity would result in greater coverage, other competent persons had tried to use that knowledge; the stimulus to success was great, and the art had been either strangely inert, if the combination was obvious, or else obsessed with a belief that low viscosity was impracticable. The result was a new and unexpected product, recognized as such, and used to much advantage. We know of no rigid doctrine, divorced from those practical considerations which rightly or wrongly are basic in the patents law, that forbids to such an advance the name of invention. . . . There it was known that by degenerating starch its absorptivity would diminish. All Perkins did was to stop the process before it became dextrine, which gave bad adhesion; and that was an invention, though he did not claim it. The situation is here reversed; instead of stopping a known process to get a new result, Flaherty extended one. That his limit is not absolute is no objection; though at first hazy as to the precise boundaries, he had always fixed a safe upper limit, and that was enough." *E. I. Du Pont de Nemours & Co. v. Glidden Co.*, 19 U. S. P. Q. 276.

"The alleged invention relates to the speeding up of a tar distillation process from a speed of tar treatment around 2 per cent of the tubular capacity of the still per minute to 10 to 70 per cent of such capacity, sufficient heat being employed to elevate the tar passed through the tube of the still to distillation temperature prior to discharge from the tube. The speeding up referred to is alleged to give a greater yield of the relatively more valuable tar oils with respect to pitch residues of any given melting point. In rejecting the claims the examiner relies mainly on the British patent to Kittle, the Lennard patent being referred to to show a tar still of the coil type capable of supplying only sufficient heat to operate at the relatively low rate prevalent at the time appellant entered the field. As we understand it the Lennard apparatus is typical of



that in use at that time. Appellant's alleged improvements are directed to apparatus of this sort. . . . By computation from certain data given in the British patent the examiner has determine that the speed of operation of the Kittle still is above the minimum claimed, 10 per cent of the tube capacity per minute. Appellant contends that the Kittle still is not used for tar or a material fairly comparable therewith, or operable with tar because of the small size of the tubing used and hence is not a reference for the process claims appealed. The fact that this reference is a foreign patent is also emphasized. We agree with appellant's contention." *Ex parte Dickson*, 10 U. S. P. Q. 202, 203.

"The process involves subjecting milk either in liquid or dry form to irradiation from an intense source of ultra-violet rays while the milk is being agitated either by flowing in a thin stream, if in liquid form, or by mechanical means if in dry form. . . . Steenbock discovered that the antirachitic factor of foods could be increased by irradiation if irradiation was terminated at the proper time. As to most foods the desired factor could be obtained without deterioration in taste or odor but as to milk he seems to have been unable to effect a substantial degree of irradiation without spoilage. . . . While appellant's process involves a utilization of many of the treatment factors generally suggested by the patentee, it involves reducing the light spacing by half in opposition to the patentee's teachings. The patentee discovered that by properly reducing the irradiation time below that required for sterilization he could get a new result, anti-rachitic activation. Appellant has discovered that by a still further decrease in time accompanied by a corresponding increase in amount a high degree of irradiation can be effected in milk without spoilage. In other words, he has discovered that spoilage is dependent primarily on the time of irradiation rather than on the degree of irradiation. While this discovery may be embraced within



the generalities of the Steenbock patent the evidence submitted tends to show that Steenbock did not appreciate the significance of these generalities as applied to the particular material here involved, milk. We think the appellant has made a patentable advance in the art and that the appealed claims should be allowed. The examiner's action is reversed." *Ex parte Supplee*, 10 U. S. P. Q. 178, 179.

"It is evident that the process here described is the same as in the Waldstein patent, using the zinc dust or fume, and mechanical agitation, but for the precipitation of copper, instead of gold or silver. The Waldstein patent is but the application of this process to a new use: that is, for the precipitation of gold and silver, instead of copper. . . . It is anticipated." *DeLamar v. DeLamar Min. Co.*, 110 Fed. at 543, 545, affirmed 117 Fed. at 246.

"Although Marsh and Cochran use the process on a particular quality of steel to improve ductability, while Ruder used it on steel having more silicon to improve permeability, it is in both cases a process for annealing steel . . . The two kinds of steel . . . were not so different . . . that its prior use on one of them is not a valid reference against patentability in its application to the other." *Newton Steel Co. v. Surface Combustion Co.*, 24 U. S. P. Q. 179.

"The references clearly show that appellant's contention that associating a plurality of filaments of cellulose material suitably bound together to make a large unit is inventive, is without merit. . . . There is nothing novel in using as a binding agent a liquid which has a solvent action on cellulose material. . . . We think there is nothing new or inventive in applying heat or pressure." *Dreyfus*, 24 U. S. P. Q. 465.

"Should it be desired to dye dark suits to a uniform lighter color it would be obvious to first bleach them and then dye them the selected color." *Bullard v. Coe*, 471 O. G. 245.

“The contention of complainant is, that this process relates primarily, and was used chiefly, in charging soda water fountains, and therefore could not be considered as an anticipation of the Mussel method patent, because of the alleged difference between the art of filling casks with beer and charging fountains with soda water. To this the answer of the court is, that ‘the difference between beer and soda water does not relate to and is not found in the different effects which back pressure will have upon them, in the filling of casks with beer or fountains with soda water; and further, that the United States Patent Office considers them not only as analogous, but classifies them practically as the same art.’ ” *Golden Gate Mfg. Co. v. Newark Faucet Co.*, 130 Fed. at 117.

“A steaming column and its function being so long and well known in the distillation art as to be a ‘tool’ of the art, no one may appropriate its use to himself and exclude others from using it in any usual way for any purpose to which it might be applied.” *Atlantic Refining Co. v. James B. Berry Sons’ Co.*, 14 Fed. Supp. 894.

“It remains only to consider whether the Stauf one-step patent process being known, the addition to it of the previous condensation was so obvious and natural an expedient that it would have been adopted by any one versed in the art. Neither from this record nor from general knowledge can we safely say this. The condensed milk which was a market commodity, and naturally would come to the mind of one thinking in that direction, may or may not have had the water removed to the degree contemplated by the specification. It may have been too thin to get the good result; it may have been too thick to suggest that it could be successfully sprayed in a practical way. To switch the unfinished condensation process to another track, and travel another road to another product, may or may not have been obvious; we do not know. The reasons which finally convinced the Examiner that the applicant had gone beyond the obvious, and convinced him

against his contrary prepossession, we accept because we cannot challenge them and the record does not overturn them." *Merrell-Soule Co. v. Northland Dairy Co.*, 28 Fed. (2) 927.

"What plaintiff did was to combine the Frasch idea of using acid to dissolve retaining limestone in an oil well, with the inhibited acids long used in the steel industry. . . . The simple idea disclosed by this patent was not hit upon many, many years ago. . . . The patent is not invalid." *Dow v. Williams*, 81 Fed. (2) 496, 498.

"The Examiner further rejects the claims on the three patents . . . in view of Schulze who discloses the use of a high vacuum in batch distillation. The conditions in batch distillation, however, are quite different from those present in this case where the heat is applied to a continuously moving thin stream of oil having a free surface. We do not think it follows from the fact that a high vacuum had been used with beneficial results in batch stills that it was obvious that a high vacuum could be applied to the distillation of thin streams with beneficial results in the way of preventing decomposition or cracking." *Ryder*, 2 U. S. P. Q. 405.

"Appellants argue that since cellulose acetate, employed in the German patent, is not the same as the acetyl-nitro-cellulose employed in their process, the reactions would not be the same and the German patent would not teach the modification of the Ledher process. . . . It is our view that the starting material of the German patent is sufficiently analogous . . . to justify a holding that the German patent is good as a teaching reference." *Bassett et al*, 1 U. S. P. Q. 173.

"Pistachio nuts . . . to preserve the nut with an ample quantity of salt and at the same time avoid rendering the kernel unpalatable by any excess . . . Compositions for preserving eggs . . . are not even for an analogous art . . . compositions for coating coffee . . . are remote." *Zenobia Co. v. Shuda*, 30 Fed. (2) 948, 949.

## VI. Process and Prior Art Apparatus

“That method claims may be anticipated by device patents is a well-settled principle of patent law.” Heintz, 21 U. S. P. Q. 630.

“If the function is inherent in this device patent, it is an anticipation of the present application for a process patent.” Stuckey, 9 U. S. P. Q. 353.

“No machine was in ordinary commercial use which coated bromide paper with a sufficiently uniform degree of evenness. . . . The patentees made such a union of these three elements that success was attained. . . . The same elements were in combination in the English patent of . . . Sarony and Johnson for a machine for making carbon paper. . . . The processes . . . were exhibited in the Sarony and Johnson machine. . . . All the steps in the process, including that . . . which consists ‘in changing the flow of the coating upon the web to regulate and maintain its uniformity,’ and . . . were taken by Sarony and Johnson.” Eastman Co. v. Getz, 84 Fed. at 459, 460, 462.

“While, therefore, it is not explicitly said that the cutter of that patent was designed to operate upon the un-separated ears and stalks, the obvious possibility of its being so used left no room for patentable novelty in a suggestion of that method. . . . It cannot be true . . . that Goddard was the first to discover that corn could be shelled by means of feed cutters, though he may have been the first to perceive how completely.” Appleton Mfg. Co. v. Star Mfg. Co., 60 Fed. at 417.

“The Hyatt specification . . . was never put into actual practice. . . . It may not be difficult, in the present state of the art, to read the Schmertz invention into the Hyatt disclosure; but could it have been done in 1874? No one ever succeeded in doing it, and this is some evidence, at least, that the description was defective.”

Schmertz Wire Glass Co. v. Western Glass Co., 178 Fed. at 988.

“To anticipate a process patent, it is necessary, not only to show that the prior patent might have been used to carry out the process, but that such use was contemplated, or that it would have occurred to an ordinary mechanic operating the device.” *H. J. Wheeler Salvage Co. v. Rinelli and Guardino*, 295 Fed. at 724, summarizing *Carnegie Steel Co. v. Cambria Iron Co.*, 185 U. S. at 423, 424.

“ ‘While in the light of the Ludington disclosures the skilled mechanic might now be able to modify and make changes in the prior art to successfully make oval cigarettes . . . the prior patents are only entitled to consideration for what they actually made known to the public.’ ” *Ludington Cigarette Mach. Co. v. Anargyros*, 188 Fed. at 322.

“While the exact showing as to the French patent may not be a completely practical device . . . We do not believe it is entirely inoperative but that it would be operative to a reasonable extent and illustrated such mechanism as could be easily remedied. . . . It follows that the appealed claim which is directly readable thereon must be held not allowable.” *Zuckerman*, 20 U. S. P. Q. 32.

“A number of patents on knitting machines are shown by the record, containing directions for their use . . . their specifications fall far short of anything furnishing instruction for making the glove of the Lamb patent.” *Lamb Knit Goods Co. v. Lamb Glove & Mitten Co.*, 120 Fed. at 271.

“The process . . . existed before Alden’s invention, in the apparatus used by the Shakers. . . . The apparatus described by Alden may carry out the process more perfectly, but the process, as set forth in the claim, is the same.” *Alden Evaporating Fruit Co. v. Bowen*, 24 Fed. at 788.



“Mulch or mulching is a common and well-understood term, long in use. The term ‘mulch paper’ was not in such use prior to Eckart’s invention. He is entitled to the credit for the original method of using much paper to assist in plant growth. . . . The second patent does not seem to be very important . . . and while it would seem that a mere matter of putting holes through paper involved no particular invention . . . if the first patent is to be sustained this should be also.” *Graham Paper Co. v. International Paper Co.*, 8 U. S. P. Q. 467.

“If the court finds any patentable invention in the complainant’s machine or ‘method,’ it must be in the face of the fact that the like had been in prior use . . . except only the substitution for this specific purpose of rotating for reciprocating dies, each being ordinarily equivalents for the other. . . . The product of the improved machine or process went into general use . . . and displaced wholly or in a very large degree prior products . . . all prior products had been unsuitable. . . . Claims . . . sustained.” *Watson v. Stevens*, 51 Fed. at 759, 761, 762.

“It was quite possible to use the lower tank as a storage heater, and there is no doubt . . . that it was frequently so used long before the patent of complainants . . . issued. . . . The only new advantage . . . is the use of one storage heater for two cooking tanks. Clearly, this is not invention.” *Vaile v. Buckeye Iron & Brass Works*, 55 Fed. at 655.

“The Garrard invention had a water-sealing idea. . . . The cover was not the cover of the milk can, but of the tank. . . . If the Garrard cover should only be relied upon . . . the beneficial results of air exclusion would be much diminished.” *Vermont Farm Mach. Co. v. Gibson*, 56 Fed. at 147.

“The prior apparatus would not have enabled the patentee to work his new process, nor was such new process ever worked before in any apparatus. . . . It is not per-

ceived how any tenable objection can be taken to the validity." *Black v. Thorne*, 2 O. G. 388.

"This patent shows a fully equipped and organized machine for producing the fabric therein described. . . . It makes no allusion whatever to a fabric of any kind having a smooth face and a plush face. . . . It is plain that no fabric would defeat him which was not capable of being pushed on one face. . . . The proofs . . . being . . . insufficient to inform the court . . . that the fabric of Keely and Wilkinson is susceptible of pushing, according to the intention of the fabric of the complainant . . . was insufficient to anticipate the patent in controversy." *Chase v. Fillebrown*, 58 Fed. at 379, 380, 381.

"There is no invention merely in doing by automatic machinery what had formerly been done manually. . . . This cannot serve to invalidate his patent, where the conception was new, the means not obvious, and the utility great. "French v. Buckeye Iron & Brass Wks., 10 Fed. (2) at 261. But see *Union Sulphur Co. v. Freeport Texas Co.*, 251 F. 656.

"The question is, not whether the apparatus devised by Reis to give effect to his theory can be made, with our present knowledge, to transmit speech, but whether Reis had in his time found out the way of using it successfully for that purpose; . . . as to the mode of treating the current of electricity . . . so as to make that current a medium for receiving the vibrations of air created by the human voice in articulate speech at one place, and in effect delivering them at the ear of a listener in another place." *Telephone Cases*, 126 U. S. at 539.

"We have carefully examined the Vinther patent. We do not find therein any teaching which seems to us to parallel appellant's teaching respecting the passing of gases upwardly and downwardly through zones of respectively increasing and decreasing temperatures. . . . Appellant has distinguished from the art." *Richardson*, 25 U. S. P. Q. 415.

“Appellant’s drawing discloses an apparatus . . . in which the oil is heated to the cracking temperature . . . is carried . . . condensed portion. . . . Equipping pipes like the aforementioned transmission lines of Dickson with valves like the aforementioned valves of Howard et al, would result in a structure substantially identical with that of appellant . . . and . . . in an identical process . . . so to combine them would require nothing more than non-patentable mechanical skill.” *Youker*, 25 U. S. P. Q. 422, 424.

“The passage just quoted shows that the primary purpose was to get a bright steel by exhausting the oxygen of the chamber; hydrogen was primarily to be used only to ‘cleanse’ the metal. However, it was admitted through one of the two valves C<sup>s</sup> and C<sup>o</sup>, and the air or other oxygen was also admitted through one of them. It is a strong inference that they were to be used together, else there would have been no reason for two. If so the whole invention was here.” *Gillette Safety Razor Co. v. Triangle Mechanical Laboratories Corp.*, 32 U. S. P. Q. 533.

“It appears, therefore, that appellee’s combination not only produces a new and better result in the field of automatic control of reactivating means, but in doing so utilizes a phenomenon always present in the process of reactivation, never before utilized, which makes the result certain. The presence of this element in the combination, in our opinion, gives it both novelty and invention.” *U. S. Ozone Co. v. U. S. Ozone Co. of America*, 16 U. S. P. Q. 244.

“The apparatus for carrying out the process is of secondary consequence, and may itself be old, separately considered, without invalidating the patent, if the process be new and produces a new result.” *New Process Fermentation Co. v. Maus*, 122 U. S. at 428.

“It being common knowledge that a charcoal stove will give off carbon monoxide under certain conditions . . . it was not invention to generate the carbon monoxide in

the car, instead of supplying it from an outside source. In other words, it does not follow that, because applicant has devised a heater capable of performing a double function and upon which he has received a patent, he also is entitled to a patent upon a process fully disclosed long prior to his entry into the field. In *re Baxter*, 285 Fed. at 1018.

"All that can . . . be conceded to the complainant, is that by adjustment of the machine operating as before they may have improved to some degree the stay manufactured, by placing the wire under an indefinite degree of additional torsional twist. . . . Doing what had been done before, in substantially the same way, but with possible better results, is a change not involving invention." *Spirella Co. v. Nubone Corset Co.*, 216 Fed. at 903.

"I am not satisfied that the idea of making nuts out of iron in the 'waxy' condition of welding heat, and subjected to such pressure on every side when the mandrel passes through the blank, was ever present to the mind of Scott. . . . These . . . are the essential features of Kenyon's invention. The state of the iron is as much a part of it as the means and appliances. . . . It is not shown . . . that these ideas were not original with Kenyon." *Wood v. Cleveland Rolling-Mill Co.*, 4 Fish. 550.

"It is . . . no anticipation of his process to find a general resemblance in the fact of a series of successive breakings and screenings. Each breaking and each screening under his plan had regard to the peculiar material to be handled and its condition as a result of the preceding operation upon it. . . . No such similar process has been shown." *Johnson v. Foos Mfg. Co.*, 141 Fed. at 85.

"Except for the described functions of the machine, there is nothing more stated in the patent than the fact of a manual transposition of the sickles after their outer edges have been serrated, so that the inner edges may undergo a like operation. Such transpositions, super-

added to the functions of the machine, do not make the treatment a method, or process, or art such as the patent law contemplates." *Gindorff v. Deering*, 81 Fed. at 953.

"Prior to the claimed date of the Collis invention, the Ekenberg Company was engaged openly in the production of dried buttermilk, in commercial quantities, by a process in all essential respects identical with the process of the patent in suit, and with machines closely resembling the machine illustrated and described in such patent." *Collis Products Co. v. Cadillac Produce Co.*, 300 Fed. 330.

"Clearly enough the apparatus could be used in such a way as to carry out this process, but, as well stated by the Examiners in Chief, this is not sufficient to anticipate the claim for the process. Not only may the apparatus be capable of being so used, but the use in the way recited in the claims must be an obvious one if not disclosed in the references." *Ex parte Braley*, 317 O. G. 234.

"The claim here is for the . . . product. . . . 'It is not sufficient, to constitute an anticipation, that the device relied upon might, by modification, be made to accomplish the functions performed by the patent in question, if it were not designed by its maker, nor adapted, nor actually used, for the performance of such functions.'" *Chase v. Fillebrown*, 58 Fed. at 376, 378, quoting *Topliff v. Topliff*, 145 U. S. at 161.

"A patent for an invention which successfully accomplishes a useful result is not void, for anticipation or prior use, because of a prior device, however similar in combination or close in resemblance to that of the patent, where such device was not operative and failed to produce the result sought, and which is produced by the device of the patent." *Alexander Anderson v. Eastman*, 31 U. S. P. Q. 120.

"Devices and publications leading up to, but not fully accomplishing a desired end, do not anticipate an invention which for the first time effectually meets all require-



ments and successfully accomplishes such end.” Cole & Cochran, 405 O. G. 281 quoting syllabus of *Quiax v. Childs Co.*, 162 Fed. 917.

“In no patent cited, and in no process testified to by any witness, does it appear that the several steps of hulling, moistening, cooking by steam, . . . were ever described . . . by any one, or that the preparation of Indian corn now known as ‘coralline’ was before produced. . . . The thing they have produced is new and useful. . . . These . . . establish the validity of their patent. . . . The . . . product independently of the process of making it, cannot be supported as for a new composition of matter.” *Maryland Hominy & C. Co. of Baltimore City v. Dorr*, 46 Fed. at 775, 776.

“The first claim . . . is not for the principle that nature abhors a vacuum . . . nor for the mechanical operation of the machine, but for the use of both by the hands of the operator in folding the wrapper about the filler to make a cigar. . . . If holding thin paper in place by pneumatic pressure, to be operated upon for making paper bags or cigarettes, was this process, it would not be new. But a tobacco leaf fit for a cigar wrapper is of much more delicate fiber than paper for bags or cigarettes; and holding it in place as it receives the filler, and is progressively folded about that as it is rolled along the perforated table and shaped by hand, is a very different operation from any in which paper had been confined by pneumatic force.” *John R. Williams Co. v. Miller, Du Brul & Peters Mfg. Co.*, 107 Fed. at 291.

“The Faure patent did not anticipate the patent in suit. . . . The Faure invention was not designed or intended to shell peas by impact. It was not constructed for such a purpose. It was intended to shell peas by abrasion, and did. If any of the peas were shelled by impact, such shelling in that mode was incidental, and we might say accidental. The construction of the machine prevented the shelling by impact of any consider-

able quantity of the peas put in the machine. . . . The construction of the two machines is different, the operation is different, the results—that is, the effects upon the pea pods—are different. . . . Complainant's patent in suit is valid." *Chisholm v. Canastota Canning Co.*, 135 Fed. 817, 818.

## VII. Process and Accidental Anticipation

"We do not regard the accidental formation . . . as of any consequence in this inquiry. What the process was by which it was generated or formed was never fully understood. Those engaged in the art . . . or any other art in which fat acids are desirable, certainly never derived the least hint from this accidental phenomenon in regard to any practicable process for manufacturing such acids." *Tilghman v. Proctor*, 102 U. S. at 711.

"There is a suggested anticipation, because . . . it sometimes happened that the glass, by mistake, ran down . . . thus realizing . . . the construction of the patent. But no such accidental and fugitive occurrence is of account. . . . It was actually made the ground of rejection, the lamp, when it happened, being regarded as imperfect and thrown out." *Edison Electric L. Co. v. Novelty L. Lamp Co.*, 167 Fed. at 980.

"The alleged prior use . . . of curled yarn . . . may possibly show a small amount of crimped yarn . . . not curled. . . . Its production was largely accidental, and its utility was not perceived by any one, and therefore could not constitute anticipation." *Salt's Textile Mfg. Co. v. Tingue Mfg. Co.*, 227 Fed. at 119.

"The fact that the air as used . . . may, or must, have had the same effect as in the Byerley process, is far from conclusive of anticipation, for it is settled law that novelty is not negated by a prior accidental production of the same thing, when the operator does not recognize the means . . . and no knowledge of it, or of the methods of

its employment, is derived from it by any one." *Byerley v. Barber Asphalt Paving Co.*, 230 Fed. at 997.

"It is also true that a skin dyed by the Francillon process may be tanned on its surface, which does not make it leather, or accidentally tanned through and through, which would make it leather. . . . An accidental result not contemplated by a former inventor cannot anticipate a later patent." *Tannage Patent Co. v. Donallan*, 93 Fed. at 821.

"But suppose it to be a fact that in DeVille's process alumina was dissolved . . . and . . . electrolyzed . . . it was a mere accident, of which DeVille made no note, and which, therefore, we may reasonably infer, he did not observe. Accidents of this character cannot be relied on as anticipations of a patented process." *Pittsburgh Reduction Co. v. Cowles Electric S. & A. Co.*, 55 Fed. at 307.

"But counsel urge upon us that if such prior use occurred the conjunction of circumstances which brought about the embodying and realizing of the Toch process and product in the Zibell process and product was fortuitous, accidental, unintended, and not understood by anybody at the time. . . . However the evidence in this case satisfies us that the use . . . is not to be regarded as in any sense accidental, or incidental, or unintentional. . . . Zibell made his product and sold it, and the public bought it and used it, to do the very things it was intended to do. . . . It may be that Zibell did not fully understand the scientific principle." *Toch v. Zibell Damp Resisting Paint Co.*, 233 Fed. at 994, 995, 997. Compare *Ebert*, 57 Fed. (2) 356, and *Regar v. Scott*, 63 Fed. (2) 230.

"The defendant was not conversant with yoshino paper. Assuming, however, that he had used it, and had coated it with soft paraffine, it is obvious that he had done so in ignorance of the characteristics of the paper and of the necessary consistency of the coating, and that the product . . . was an accidental product, which con-

tributed nothing to the prior art. . . . Novelty is not negatived.” *Wickelman v. A. B. Dick Co.*, 88 Fed. at 266.

“We assume that Adams had invented a new and valuable process. . . . But he took his patent for the product. . . . Cast copper cylinders free from blow holes. . . . That patent was anticipated. . . . The difference between the old methods and the new is simply in the proportion between failure and success,—the best of distinctions if the process were in question, but inadequate to justify a patent for the product.” *American Tube Works v. Bridgewater Iron Co.*, 132 Fed. at 17, 18.

“The defendant’s answer asserts, substantially, that long before the date of the patent he and other . . . pursued the method of manufacturing pulp-size paper here complained of. . . . If it was beneficial he got the benefit, and is entitled to such as may arise from a continuance. . . . That he was unaware of the benefit, and that it . . . was accidental, argues nothing against his right to pursue his business as he had been accustomed to do in the past.” *Dorlan v. Guie*, 25 Fed. at 817, 818.

“Before the date of Cooley’s invention, several other persons had been in the habit of occasionally submerging vessels containing milk during the process of raising cream therefrom, and in some instances, at least, such use was public. But it also clearly appears that none of these persons proceeded so far as to discover the utility of the process, or were aware of the fact that by . . . this process the cream could be raised in a much shorter . . . time . . . and that by it a better quality of butter was to be secured at a reduced cost.” *Boyd v. Cherry*, 50 Fed. at 282.

“No one before Locke discovered that the gold-ruby compound could be so treated, and that it would produce an article so attractive in appearance. . . . Prior to Locke, any amber color in the ruby glass was considered

accidental, and the article imperfect." *Libbey v. Mt. Washington Glass Co.*, 26 Fed. at 758.

"Sometimes, because the filling was . . . too heavy to be poured all at once into the weakened trunk of a tree, it was necessary to put in some of it, and let it harden sufficiently to sustain the weight of that which was to rest upon it. . . . Some of these fillings may in a more or less imperfect degree have had some of the merits which Davey claimed for his. . . . If ever they were present, no one knew it. Such . . . uses do not anticipate." *Davey Tree Expert Co. v. Easton*, 283 Fed. at 842.

"Stephan was seeking to make an antiseptic powder. His insoluble product was an accidental and not desired substance. . . . He . . . certainly was not teaching the production of the insoluble substance." *General Bakelite Co. v. General Insulate Co.*, 276 Fed. at 174.

"McGovern insisted upon having stone. . . . To meet his views, or appease his opposition, Blake, . . . had stone dumped there. The broken stone was of all sizes. The material used in the paved part of the street supplied the necessary binder. It is now found that in places the mixture was . . . a very fair counterpart of the Warren pavement. In other places . . . different. Can this be said to be such an anticipating as to defeat the patent?" *Warren Bros. Co. v. Evans*, 234 Fed. at 659.

"It may well have been that, before the Stockheim process was explained, some one may have filtered highly charged beer under pressure. . . . But . . . no one recognized that as the essential condition . . . or explained its function. . . . And cannot deprive another, who afterwards discovers and proclaims the true principle of the operation, of the rights of an inventor." *German-American Filter Co. v. Erdrich*, 98 Fed. at 307.

"It is only in the light of what Smith afterward discovered, and did, that the disclosures of the Baggaley and Allen patent have any application to Smith's problem.



. . . Baggaley and Allen . . . did not suggest even remotely the idea of Smith so to proportion 'the amount and composition of the flux to the volume of air . . . that . . . there would result a thin and fluent slag at a temperature insufficient to substantially attack the lining.' " *United Verde Copper Co. v. Peirce-Smith Converter Co.*, 7 Fed. (2) at 16.

"They were a series of experiments intended to discover other uses for asphalt, but not one of these went into public use. . . . The lining in the reservoir. . . . Such a lining was not designed or fitted to meet the wear and disintegrating influences to which the wearing section of a street pavement would be subject, and . . . it taught little or nothing in the art of street paving." *Warren Bros. Co. v. City of Owosso*, 166 Fed. at 314.

"It was the batch method which was suggested by the [prior] patentee, and clearly there is no teaching of a continuous minor flow. . . . This patent in its language describes what the patentee suggests may be possibilities rather than what he has found can be done, and is not an anticipation of the patent in suit." *Electro-Bleaching Gas Co. v. Paradon E. Co.*, 8 Fed. (2) at 892. See *Schlacks*, 32 U. S. P. Q. 332.

"It being disclosed in the prior art that the amount of stretch put into the crinkled paper at the doctor could be maintained during its transfer by giving the transfer means a given ratio of speed with reference to the speed of the crinkling roll and of the discharged paper, we think that it did not involve invention to change the ratio of speed between the transfer means and the crinkling roll by increasing the speed of the transfer means a fixed percentage so as to take out a given percentage of the stretch in the paper, either as a step in the process or an element in the machine." *Arkell Safety Bag Co. v. Safe-pack Mills*, 272 Fed. at 8, 9.

"Rotating moulds were old, . . . but the apparatus described in the Adams patent, whereby the stream of

molten copper is deposited in the annular space of a cylindrical mould so as to fall in subdivided portions all around, intermittently, in such manner as to allow the gases to escape and thus avoid blow-holes, is seen in no prior patent." *Adams v. Bridgewater Iron Co.*, 26 Fed. at 327.

"This glove astrakhan, or glove cloth, was never recognized by any one as the same as that of the Steiner patent, and it never effected the kind of results attained by the patented fabric, because it lacked the very thing which gave the latter its success as an imitation of real Persian lamb." *Salt's Textile Mfg. Co. v. Tingle Mfg. Co.*, 227 Fed. at 119.

#### **VIII. New Step, Miscellaneous**

"When it 'inaugurates a new industry,' courts should be 'zealous so to construe the claims as to give validity to what is a meritorious invention.'" *Homer Brooke Glass Co. v. Hartford-Fairmount Co.*, 262 Fed. at 430.

"That the Goodrich people made a physically successful sponge . . . and that it was actively put on the market is likewise clear. . . . These activities were sufficient to carry the enterprise beyond the stage of experiment into the realm of business. . . . The Goodrich Company failed to make a sponge that was commercially successful, because of excessive waste in manufacture. . . . Decree may be entered for the defense." *Featheredge Rubber Co. v. Miller Rubber Co.*, 250 Fed. at 256, 257, 259.

"After the idea had been reached that butt-welding the end of a tubular blank could be beneficially obtained by inwardly bending the edges of the blank towards each other, the shape of the dies and the separation of the edges by the blank were matters of detail. . . . The round handle was a modification of the oval handle . . . but I do not place the decision upon that ground, but upon the prior invention of the oval handle, which was manufac-

tured in accordance with the distinctive characteristic of the Jordan method, although with little commercial success." *Lee v. Upson & Hart Co.*, 42 Fed. at 533.

"The nearest alleged disclosure of the prior art is . . . a method for sinking an empty pipe into the ground with a steam jet to disintegrate the material in advance of the pipe. . . . The next nearest disclosure is . . . a method for cleaning flues by steam jet. . . . Before the discovery of the plaintiff's method, it was old to fill the hollow billets with sand. . . . It remained for the plaintiff's patentees to discover a new method for removing the sand by the use of compressed air. . . . Defendant infringes." *Crucible Steel Co. v. Heller Bros. Co.*, 291 Fed. at 179, affirmed 297 Fed. at 43.

"It was always known that any solid or liquid material falling continually on any surface would wear away the latter. . . . There is nothing in all this that touches the plaintiff's invention. . . . The discovery that a stream of sand, driven with sufficient velocity to cause the grains of sand, through their own velocity and momentum, to act as projectiles against the article to be cut or dressed, will do the work effectually without any vehicle to carry the sand into contact with the article, and without any contact between anything and the article except the sand." *Tilghman v. Morse*, 1 O. G. 574.

"Hollow bottomed lasts had been used. . . . But not for the purpose Green used them, and not to attain the result he attained. By first combining his upper and his thin leather outer sole and his padded insole attached thereto, and using the material he does, and then turning and inserting the last, wetting the upper and then drying it on this hollow bottomed last, he not only gives perfect form to the upper, but stretches the outer sole out flat, making an easy and desirable tread, but he at the same time forces the pedded insole up into the hollow of the last, and gives proper and desirable shape to it. I cannot find that hollow bottomed lasts had been used in the

felt show industry . . . for this purpose.” *Daniel Green F. S. Co. v. Dolgeville F. Shoe Co.*, 205 Fed. at 750.

“The invention belongs to a crowded art, showing that steps consisting of sewing the welt to the upper before lasting, tempering the leather to aid lasting and cementing the shoe parts were old adaptations, yet the different elements . . . had not been assembled before to produce a new result. . . . Such an innovation . . . in view of the commercial success attained by the article . . . was, I think, the result of skill beyond the ordinary skill of the cobbler.” *Anna Maloney v. F. A. Kulmert Corp.*, 2 U. S. P. Q. 440.

“The Patent Office tribunals concurred in holding that, in view of the reference, it would be obvious to one skilled in the art, knowing of the disadvantages resulting in cutting a great quantity of parts in advance of the time of their assembly, to arrange the assembly stations and the machinery necessary for cutting out such parts so that the operators could assemble them immediately after they were cut and ready for use.” *Ostling*, 22 U. S. P. Q. 47.

“This . . . narrows the process to removing the wax by heated plates contacting with the particular surface to be glued. This was new . . . very useful. By the old method . . . one could not remove the wax in a proper way for commercial use. At the edge which was nearest to the heat all the wax would be taken off, and then, of necessity, there would be a twilight zone. . . . This would not leave the surface in a satisfactory condition. . . . Defendant has infringed.” *Sutherland Paper Co. v. Michigan Carton Co.*, 13 Fed. (2) at 886.

“Certainly ‘applying pressure to the glass sheet, both laterally and longitudinally of the sunken portions, until the glass sheet has been depressed into the sunken portions throughout the area defined thereby,’ does not of itself represent invention. . . . Briefly stated, the patentee gave directions to heat glass over a die and see that the material filled the die completely. . . . This was not



invention.” *Flexlume Sign Co. v. Opalite Sign Co.*, 292 Fed. at 102.

“He was the first to discover that a core or bag could be dispensed with and that water, preheated to a vulcanizing temperature and under pressure in excess of the temperature pressure, could be introduced into direct contact with the innerside of the tire casing in successfully carrying out the process of vulcanizing tires.” *Laursen*, 24 U. S. P. Q. 16.

“There is a really new feature in the Crimorosi process which consists in the combined agglutination and agglomeration of the granules of sawdust formed by the process of tumbling. . . . This . . . creates a new utility for this class of objects . . . safety . . . protection . . . certainty . . . intensity.” *Victory Fireworks and S. Co. v. Commercial Novelty Co.*, 31 U. S. P. Q. 355.

“The prior art . . . does not show the steps of combining the impartion of a plurality of marked pelt designs in color to the pile, and then disturbing the pile intermediate the designs by the whirring instrument to simulate sewing between the individual marked pelt color designs. This is what Stolzenberg invented. This method was a novel step in the art and was patentable.” *Sidney Blumenthal & Co., Inc. v. Salt’s Textile Mfg. Co.*, 21 Fed. (2) 472.

“The Examiner takes the position that the concept of applying printed marks to any material . . . uninventive. . . . The cellulose material of which sausage casings are made and the form of such casings are such that we are not satisfied that the concept of printing them prior to stuffing is an uninventive one. . . . Given appellant’s teaching, it might be possible to concoct from the cited art an equivalent ink but, inasmuch as no claim is directed to the ink per se, the patents would obviously not anticipate.” *Freund*, 21 U. S. P. Q. 528.

“The idea of using an oil or grease . . . is not new in preserving eggs. . . . There was no invention involved



in the selection of an odorless, tasteless, colorless non-volatile mineral oil as a suitable oil in which to dip an egg for human consumption." *Kasser Egg P. Co. v. Poultry Producers*, 9 U. S. P. Q. 400.

"Before Smith there had been efforts to set eggs in staged incubation, but without practical success, because of the difficulties of securing adequate heat distribution within the incubator. He was the first to apply mechanically circulated currents of air to eggs so arranged. He followed this procedure in conjunction with the use of a restricted opening for the elimination of foul air. By this combination the difference in temperature of the eggs was equalized within the desired range throughout the incubator during the period of incubation, the air within the incubator was gradually replaced by fresh air, and the moisture of the eggs was conserved. His method thus solved the major problems of artificial incubation in a highly efficient manner. It was novel and involved invention." *Smith v. Snow*, 294 U. S., 6.

"The art regarded it as dangerous to raise the temperature higher or lower the relative humidity below what the schedule made the path of safety. . . . The Krick patents . . . went outside. . . . The decided advance made in the lumber drying art." *Mengel Body Co. vs. Humidity Control Co.*, 2 U. S. P. Q. 238.

"In all processes, the individual steps are successive rather than simultaneous, and to make a valid claim for a combination it is not necessary that the several elementary parts of the combination act simultaneously." *Danbury and B. F. Co. v. American Hatters and F. Co.*, 54 F. 2nd, 346.

"The improvement in the art of projecting sound pictures which comprises first determining what portion of the available width of the film shall be devoted to the sound track, taking a picture while optically compressing it laterally to bring it within the remaining portion of such available width, imposing the sound track upon said

predetermined portion, and projecting said picture with optical restoration to its normal proportions while simultaneously reproducing the sound, whereby satisfactory uniformity and quality of sound reproduction may be obtained without sacrifice of size of projected picture. . . . The article which is claimed here is a film and is not the instrumentality, including the lenses, with which the method is performed [allowed]." Chretien, 20 U. S. P. Q. 225, 227.

"The subject matter involved relates to vermiculite, heat treated and thus caused to expand. This material is then comminuted and mixed with clay after which it is plasticized and molded into an article. The molded article may be heat treated if desired. The examiner has held that claims 6 and 7 are drawn to aggregations as the addition of steps of forming the article and heat treating do not constitute any patentable combination with the preparation of the mixture already recited in claims 6 and 7. While it may be true that there is no invention in giving form to the mixture and heat treating it, we consider that appellants should be allowed to include these steps to produce their completed article if they so desire. . . . The reason that the examiner has held that the copied claims do not read on appellants' disclosure is because there is no mention of water in the application. Appellants have stated that their mixture is plasticized and that it is dried but the examiner points out that the plasticizer employed need not necessarily be water. While it may be true that ordinarily water would be employed for plasticizing compositions of this nature and that its use would not involve any invention over the matter disclosed in the application, we believe it is clear that the question of patentability is not involved in questions relating to a party's right to make claims for interference purposes." Sucetti and Kohr, 19 U. S. P. Q. 53.

"The invention lies in the creation and compression of this loose, nonhomogeneous mass of mineral-coated

vegetable matter into a homogeneous mass of artistic appearance and useful qualities. Whatever may be said about the different constituent elements used by the plaintiff and Bidel, the latter did not have the third and important element of the plaintiff's process. . . . The patentee invented a new and useful product, and it is not permissible for an infringer to go to the prior art and defeat the patent by selecting the various elements of the patentee's process from different patents, bring them together, and say that this aggregation anticipates. Knowledge after the event is always easy, and problems once solved present no difficulties." *Craft-Stone Inc. v. Zenithern Co.*, 22 Fed. (2) 402.

"Appellant has filed an affidavit in which he states that . . . where the oyster shells were not thoroughly washed after being crushed, he was unable to secure a suitably hard, durable, concrete, and that when the oyster shells were crushed and then washed he was able to obtain a product which is light, hard and durable and which can be sawed and nailed." *Adams*, 4 U. S. P. Q. 19.

"This application discloses a method of preparing resilient construction material and the product. It comprises treating fibrous materials, examples being broom corn, cocoanut fibers, sisal and excelsior first by impregnating it with an oily substance such as cotton seed oil, wood oil, glycerin, soap solution together if desired with some sulphur chloride or free sulphur and then with asphalt or rubber compositions. . . . While it may be true, as stated by the examiner, that the use of fiber in an unground state is notoriously old in the art, it is not true, so far as the record before us is concerned, that the use of fiber in an unground state, treated as appellant treats it, is old in the art. The product resulting from Grist's method is very different from the product resulting from appellant's method stated in the claims involved, and it would appear that, because of the omission of grinding, appellant secures a better product than could

be secured by Grist's method. Grist seems to have had no conception of this and we therefore cannot hold that the omission by appellant of the grinding step shown by Grist did not involve invention, so far as this reference is concerned. . . . We therefore hold that said claims 1, 3, 6, 9, 10 and 11 should be allowed." Fischer, 16 U. S. P. Q. 368, 369.

"What he patented was simply a process of changing a motor circuit from series to parallel to increase speed and at the same time changing the field circuits of the motors to prevent harm to the motors during the other change and upon the completion thereof. He patented a thing; that thing was a process or method; the process or method was these changes in the motor and field circuits in the manner called for in the claim; and the result which he secured was acceleration of speed and protection from harm. . . . The fact that Potter, in connection with this thing, uses external resistance as an additional protection, and Brown omits it, does not affect to any extent the identity of the two things. . . . Here Potter's external procedure and internal procedure did not constitute a combination effecting a certain result. They were two separate things used in conjunction . . . each effecting a separate result." Westinghouse E. & Mfg. Co. v. Toledo, P. C. and L. Ry. Co., 172 Fed. at 392.

"The ore is maintained in a state of fusion by the heat developed by the passage of the current through the melted mass. . . . It keeps the ore melted . . . it effects the desired electrolytical decomposition. . . . The effort of inventors was directed to the perfection of processes in which external heat was employed to melt the ore and keep it in a fused state." Electric Smelting & A. Co. v. Pittsburg Reduction Co., 125 Fed. at 927, 928, 932.

"But wrapping granulated or otherwise properly prepared tobacco with suitably delicate paper into cigarettes is very different in accomplishment from making the things for which the machines of those patents were



adapted . . . none of them have any of the combinations of these claims doing the same thing in substantially the same way. The first claim of Hook is sought to be upheld as for a process . . . but the operation so mentioned is of mechanical parts, producing only mechanical changes. . . . The process of making cigarettes by wrapping paper about tobacco was old. These means of doing it only were new. This claim as for the process appears to be without foundation and invalid." *Bonsack Mach. Co. v. Elliot*, 63 Fed. at 837.

"Plaintiff claims that prior . . . tailors, in making form-fitting matched black coats, shrunk for blade hollow only, and not to curve the upper part of the back half, but in my mind the shrinking to obtain a blade pocket resulted in curving the back seam. The patentees merely carried forward an old process, describing it in new terms and adapting equivalent modes or steps 'under conditions recognized as possible, within the knowledge of any mechanic, but not previously stated in language,' but this was not invention." *Cohn, Rissman & Co. v. Hickey-Freeman Co.*, 246 Fed. at 259.

"The process of shaping lace mitts . . . by the old process the articles were first made too small for the large parts, as well as too large for the small parts, and then correspondingly enlarged and contracted; while by the process of the patent the articles are first made large enough for the large parts, and shaped only by contraction where they are too large. The treatment of the parts operated upon is precisely the same in each. . . . There does not appear to be any patentable novelty." *Jennings v. Lowenstine*, 31 Fed. 84.

"The use of cork in mechanics as a superior and practical frictional agent was long well known. . . . Invention was not involved in the mere insertion of cork in these strips. . . . Appellants' strip was woven to their order—heavier and better . . . and was treated by a secret and superior process, all of which may be the main factor in



its longevity.” *Advance Automobile A. Corp. v. Reflex Auto A. Co.*, 284 Fed. at 118, 119.

“Johnston’s theory of correlation was to move the material in very accurate register at the seam cleft, as fast as the material could be heated to the welding point just at the cleft, in time to be subjected to a pressure that would cause practically no extrusion of metal in burr. . . . At 75 feet and over a minute, and by using alternating current of large amperage. . . . Three times as much tubing in the same time. . . . The Parpart device . . . did give the unwelded tube enough time to get heated. . . . This is what Parpart did; Johnston showed how to do something else.” *Elyria Iron and Steel Co. v. Moughton Tube Co.*, 7 Fed. (2) at 830.

“The specification of Edenburg . . . proved to be a failure even on low voltages of six volts and yet defendant argues that it would suggest to anyone skilled in the art, the commercially successful process and electrolyte that Georgiev taught and that Michamold is using. . . . I reject this defense . . . it is purely hindsight argument. . . . The Georgiev patent must have required invention, or the prior process would have suggested the improvement to the man skilled in the art promptly . . . instead of losing valuable time.” *Aerovox Corporation v. Micamold Radio Corporation*, 29 U. S. P. Q. 449.

## IX. New Step, Mechanical

“If appellant is the first in an art as old as candy-making to conceive of continuously applying a coating to a continuously produced center before the cutting occurs, we do not feel justified in holding that this procedure is an obvious one.” *Ex parte Cloud*, 33 U. S. P. Q. 446.

“The claimed invention in the method presented here chiefly centers around the idea of first bending the strips before winding, and opening the bent strips for the purpose of winding, and closing the ends of the strips after

winding, which permits the winding of the core without the injury to the metal which would result from completely bending the same after it had been annealed. It is claimed that the use of the particular steps of this method is the solution of a problem which has long confronted the makers of transformers, and which remained unsolved until appellant solved it by his disclosure at bar. It is contended by appellant that new and useful results flow from his invention. . . . It is not claimed here that any of the references discloses the steps of the claims at bar. The finding of the board is based upon the premise that no new and useful result is obtained except that which is obtained by a method which is obvious to the workman. Appellant, we think, has contributed greatly to the art of coil winding and has successfully solved a problem, for the solution of which, the record before us shows, no one in the prior art had offered any helpful suggestion. The applicant is entitled to such reward as the patent laws authorize under such circumstances." *Gakle*, 16 U. S. P. Q. 374, 375.

"Young was before the public for six years before any 'skilled artisan' succeeded 'in adjusting the various elements so that a flat sound record of the type in question could be produced,' and no one prior to Jones saw that it could be adapted to a practical disk record with lateral undulations. . . . It is also evidence of invention if one, by taking a step forward, sees that what appeared to be barriers to progress are mere obstructions to side paths and by ways, and that the road to a practical invention lies straight before him. . . . The question of invention . . . may be resolved in favor of the patent by evidence of successful results where others have tried and failed." *American Graphophone Co. v. Universal T. Mach. Co.*, 151 Fed. at 598, 599.

"The prior art discloses no application of a continuously circulating current of air to eggs in staged incubation which would restrict Claim 1 with respect either to

the arrangement of the eggs or the direction or control of the current of air." *Smith v. Snow*, 294 U. S. 18.

"Apparently the key to the problem of incubation in mammoth incubators by what is known as staged incubation, lay in the ability to maintain a constant temperature in the incubating compartment. To do this it is necessary that the air currents in the incubator move with comparatively high velocity. . . . The air in the Lawry process was given some momentum by an electric fan, but the effect of this momentum was almost entirely dissipated by the fact that the current of air was forced through a large number of small openings. . . . The obvious purpose . . . was to supply fresh air without agitating. . . . The Smith patent is valid." *Waxham v. Smith*, 21 U. S. P. Q. 180, 181.

"The conditioned air in the Central Park structure . . . amounting to . . . about 8 per cent of a total volume . . . would not appreciably affect the temperature for reheating or control the relative humidity. It would be a negligible quantity. . . . It is not deemed anticipatory." *Auditorium Ven. Corp. v. Greater Rochester Properties*, 59 Fed. (2) 453.

"In each of these references heated air is passed through the hair and used for the purpose of drying. . . . The Examiner . . . holds that it is patentably immaterial whether the circulation is caused by the air forcing means of Hudson and Krauer or by suction means as in the other patents. . . . The Examiner is affirmed." *Suter*, 2 U. S. P. Q. 194.

"It is common to use water to cool gases circulated through pipes. . . . The brief states that it has been the practice to accomplish the entire cooling operation by artificial refrigeration and that he has greatly reduced the expense by reason of his perception that the temperatures were such that within the range of cooling effect of water at ordinary temperatures he could remove more than 50 per cent of the heat units without any considerable

expense and without affecting the heat balance of the system as a whole, with the result of a saving on each factory unit of \$16,000 a year. . . . We consider the claims patentable." Kniskern, 2 U. S. P. Q. 196.

"The only purpose of the third liquid in Fawcett is to facilitate the escape from the bowl of the solids. Appellant's process on the other hand, provides separate outlets for the two heavier constituents by means of the relative size of two outlets, one permitting the escape of the more free flowing of the two heavier constituents through an outlet so small as to prevent the escape of the other heavy constituent. . . . This process is neither inherent in Fawcett's apparatus, nor would it be obvious to one skilled in the art making practical use of such apparatus." Walch, 32 U. S. P. Q. 326.

"In the prior art, reed furniture, such as chairs and baby carriages, were hand woven just as the Aztec Indian made his baskets. By the Lloyd method, the fabric is separately woven, and applied to the frame. . . . The gist of the novelty in Lloyd's invention is in reshaping the material upon the frame to be covered so that neither cutting, nor piecing, nor folding the fabric is necessary. Lloyd saved the industry the tedious hand process of making stake and strand furniture by the hand weaving process. He saw how the fabric could be shaped to produce the same results as were produced by the old and expensive method." *Greenwood v. Monarch Mfg. Co.*, 30 Fed. (2) 547.

## **X. New Step, Metal Working**

"Wegner taught the art of reshaping worn fish plates by flowing the metal by pressure so that. . . . It is contended by applicant that his process differs from Wegner . . . in the fact that the . . . patent does not disclose a die which completely encloses the angle iron operated

upon. . . . This is not a patentable distinction." Langford, 4 U. S. P. Q. 321.

"Difficulties, however, arose in the use of the earlier methods to satisfactorily weld unlike metals having widely different melting points, the union tending to be purely a mechanical one in which the metal having the higher melting point was held encased in a ball of the metal of lower melting point. It was also found that in the case of metals which formed a very brittle alloy, such as copper and aluminum, the fusion of both metals by the old processes produced points of weakness on each side of the joint where the welded structure was liable to break. The patentee Chubb conceived the idea that if the heat-producing energy could be applied between the surfaces to be welded in comparatively enormous volume and for an almost infinitesimal period of time, and these surfaces could simultaneously be brought into percussive contact, both difficulties could be avoided. Both such surfaces would fuse, even though the metals had widely different melting points; but this fusion would be so shallow, and the firm of brittle alloy would be so thin, that a true weld of flexible character would be produced. . . . This conception seems to us to possess the attribute of distinct novelty, and not to be a mere carrying forward of the old idea, a variation of degree, or improved craftsmanship. The nature of the weld produced and the speed with which the operation could be completed marked an advance in the art which was immediately recognized." Westinghouse Electric & Manufacturing Co. v. Quackenbush, 11 U. S. P. Q. 45.

"Even if we were willing to concede that the patent in suit describes a process of welding rail ends together by means of molten metal which is different from that suggested by Norris, in that the latter neither advised the cleaning nor the heating of the rail ends before the molten metal was poured into the mold, still the fact remains that long prior to the alleged invention by Hoffman and Falk



other patentees had explained the necessity of cleaning and the utility of heating the surface where the union by fusion was to take place. It cannot be said, therefore, that they suggested a new step in the art of cast welding, or that by a change in the old methods of manipulation they succeeded in producing a result that was substantially new." *Falk Mfg. Co. v. Missouri R. Co.*, 103 Fed. 301.

"Witherow was the first, in my opinion, to die roll articles with an elemental leader bar, designated in the patent as a rudimentary leader, in combination with other steps and elements. He was the first to design and use peripheral grooves in the rolls of varying cross-sectional dimensions for rolling strings of articles, including front axle blanks and rear axle shafts, which were later cut into units; the said articles having intermediate portions of varying dimensions requiring reduction in diameter and with fixed center to center tolerances, and a definitely located flash extending along the intermediate portions of the blank, thereby securing length control and contour, and adapted to be cut or shorn off. It was merely the application of an old process to a new subject. On the contrary, the old adaptations, I repeat, were unable to die roll front and rear axle blanks. The evidence establishes that his achievement, though perhaps akin to an analogous subject and method, nevertheless required changes and alterations in their application which developed a new and distinctive result; one that not only was beyond the contemplation of the old process, but one which in fact required the exercise of the inventive faculty to make practicable new and original ideas and conceptions." *Witherow Steel Corp. v. Donner Steel Co.*, 31 Fed. (2) 168.

"The invention is a method of making tin plate . . . layer of flux is laid on the surface of the molten tin. . . . To prevent chilling of the tin by the entering plate and also to remove tin-oxide and tin-iron alloy . . . the molten tin is moved laterally away from the plate. . . . The Examiner holds that there would be no invention to transfer

the rollers. . . . There is no teaching in these patents to prevent chilling. . . . The claims . . . are allowable." Diescher, 9 U. S. P. Q. 496, 497.

"This application relates to a method of hardening and brightening the surfaces of metal articles, the method comprising moving in contact with the articles hard balls of different sizes, the balls being submerged in a cleansing and lubricating solution. Applicant states in his brief that the benefit of using balls of different sizes is to effect a separation of the larger balls so that they can not form a regular arrangement which would tend to produce lines or grooves in the article. . . . Hart et al. discloses an apparatus for polishing silverware comprising a receptacle containing balls of apparently the same size and adapted to be rocked back and forth to produce a movement of the balls in the receptacle. Means are provided for supporting the articles in the receptacle to be polished by the movement of the balls. The examiner takes the position, while this patent does not state that the balls are of different sizes, unless great care is taken, which hardly seems probable, the balls are certain to be of different sizes. . . . As each of the appealed claims includes the use of balls of different sizes and as we do not feel satisfied that the references fairly teach the use of balls of different sizes for polishing and hardening we are of the opinion that the appealed claims should be allowed." Fabens, 13 U. S. P. Q. 68, 69.

"The cable is fed from a reel through an electric furnace. . . . The question . . . is whether or not it involved invention to maintain the entrance portion of the furnace at a temperature somewhat above the temperature of the remaining portions. . . . We deem this . . . devoid of invention. . . . Claims . . . are directed . . . feeds his heated cable without causing it to be subjected to such forces as to produce distortion. . . . We recommend allowance." Elmen, 2 U. S. P. Q. 211.

“It is argued that Ripley merely aggregated articles well known before and that the aggregation had no new function. I think that this is an unfair disparagement of his work. I cannot find that plastic rosin had ever been used in soldering, even separately from the solder. Lamb’s idea was to mix rosin with a solvent, turpentine included of course, but the product conceived of by him was distinctly a fluid unsuitable for use as a core in solder wire. Ripley’s idea, on the other hand, was a plastic solid. The defendant’s argument would have more force if it could be shown that the use of plastic rosin in soldering, the rosin being kept separate from the solder, had been taught prior to Ripley. There is no such showing.” *Kester Solder Co. v. Silva Wares Co. Inc. etc.*, 10 U. S. P. Q. 130.

“He makes no change in the composition of the fusing agency or in the mold of the old art, for, as he states, he performs “the casting in the intermediate space in known manner”; but his single individual, and only additional disclosed method consists, as he says, “in inserting into the space between the head portions of the rail ends an intermediate piece of the same material as that from which the rails are formed, and then performing the casting in the intermediate space in known manner. . . . The aim of the patentee was to obtain a uniform homogeneous weld of rail metal in the tread of the wheel.” *Alumino-Thermic Corporation v. Goldschmidt Thermit Co.*, 25 Fed. (2) 207.

“While there is no disclosure in said patent of any particularly desirable pressure . . . it is clearly pointed out that pressure is an important element. . . . If the claims were allowed, a skilled operator who had learned by experience to produce a good weld . . . would inevitably infringe these claims. . . . They do not define patentable improvements.” *Murray*, 8 U. S. P. Q. 293.

“The recitals . . . quoted strongly indicate that Moxham proposed the use of only performed wires. . . . Appellant distinctly describes the element of unformed wires

and definitely claims it. . . . Appellant's method is virtually the same as that taught by Roebbling but since these claims contain the limitation of use in part of unformed wires . . . these should . . . be granted." *Sunderland*, 20 U. S. P. Q. 145.

"Is a claim to the mode or process of tempering and straightening a rib which has a body and flattened portions wider than such body, by drawing the rib through a straight hole or groove in a heated metallic die . . . to at once embrace closely the body of the rib and yet, by supplemental spaces in the groove, to allow such flattened portions to pass through freely and be brought in line with each other. . . . The use of the square groove in the manner and for the purpose indicated . . . is not the mere use of an old thing for a new purpose." *American Mfg. Co. v. Lane*, 15 O. G. 421.

"Such a discovery and such a process were needed for no other castings. The novelty of the patentee's invention is not therefore disproved by evidence that glass, or speculum metal, or even other iron castings had been annealed and slow cooled. . . . A new and previously unknown result is obtained, namely: the relief of the plate of the wheels from inherent strain without impairing the chilled tread." *Mowry v. Whitney*, 14 Wall. at 642, 643.

"The art of soldering is analogous to that of welding. . . . Given the desire for a welding in spots. . . . Not only every principle, but every electric and mechanical process . . . was well known in the prior or directly analogous arts, or in mechanical arts generally. We cannot think, in view of the prior art, that invention is to be found in the considerations, separately or collectively, that in Harmatta no bodily movement of the sheets is required, that the current is localized and pressure exerted solely by the electrodes, or by the difference in the form of the electrodes, or by the difference in amount of extruded metal." *Thomson Spot Welder Co. v. Ford Motor Co.*, 281 Fed. at 684.

“But counsel assert that Philbrook used only Watts metal for his inlays, and urge that Taggart’s ‘invention’ . . . gave gold inlays to the dental profession and that his invention should be protected by limiting the claims to gold. . . . Counsel has failed to point to any claim which is for such a detailed and specific improvement over the prior art that it could be saved by limiting metal to gold.” *Taggart v. Bremner*, 295 Fed. at 507, 508.

### **XI. New Step, Bacteriological**

“Assuming that the process of inoculating a mash containing sugar with bacteria is old, then in testing the process by the law of substitution of materials, the appellant has not only discovered a new reagent, the bacillus technicus, but he has also discovered that when applied to a suitable mash it will produce butyl and isopropyl alcohols without ethyl alcohol, a result which is valuable and hitherto unknown to anyone. Such substitutions of elements in old processes are uniformly recognized as inventions. We are unable to agree with the Examiner that processes involving bacterial action do not involve patentable subject matter nor that they are lacking invention in cases where a new bacteria has been used to produce novel and useful results.” *Prescott and Morikawa*, 19 U. S. P. Q. 180.

“Having passed his sewage through the secluded pool, where it was exposed to anaerobic action only, it is aerated and then subjected to aerobic action. It is this method of dividing the process which complainant claims to be novel. . . . Cameron’s process . . . is patentable.” *Cameron Septic Tank Co. v. Village of Saratoga Springs*, 159 Fed. at 456, 463.

### **XII. New Step, Chemical**

“We cannot define just what makes Pauling’s, or any other process, inventive; but when a great art has been



for a long time and with blind eyes traveling along a line, and some practical man as here raises his eyes, sees there is a boundary line between prosaic old practice and possible prospective improved practice, and crosses such line by a few short steps, and passes into a new and more productive field, assuredly the shortness and simplicity of his step should not belittle the change it has brought about." *Southern Electro-Chemical Co. v. E. I. DuPont de Nemours & Co.*, 20 Fed. (2) 99.

"While in the light of the invention of the patent it may seem that it would naturally have occurred to one acquainted with the Bell and Fell disclosure to have tried the substitution of arsenic acid for sulphuric acid in making arsenate of lead, the fact remains that in the 40 years which elapsed since Bell and Fell it seems to have occurred to no one to try that experiment. In the light of this fact, and the further fact that mere analogy is not, in chemistry, usually so certain an index as in mechanics . . . we are not satisfied to say that it was within the expected skill of the chemist to know that Bell and Fell's process of making sulphate of lead . . . was equally available for producing arsenate of lead by the mere substitution of arsenic acid for sulphuric acid." *Toledo Rex Spray Co. v. California Spray Chemical Co.*, 268 Fed. at 204. But see *General Electric Co. v. Paramet Chemical Corp.*, 28 U. S. P. Q. 496.

"The so-called drying of paints and varnishes is not the same as evaporating moisture from wood or other products, nor does the use of the earlier lumber dry-kiln process even suggest that it might be used to dry paints. For years it was supposed that the introduction of moisture would delay the hardening, and it is a matter of common knowledge that efforts were made generally to keep water away from fresh paint. . . . It required genius to discover, by experimentation or otherwise, that the old process was suitable for the new use, and would produce a beneficial result theretofore unforeseen."

Wenborne-Karpen Dryer Co. v. Rockford Bookcase Co., 269 Fed. at 145.

“The Star Piano Company had used . . . water pans to get the moisture. These pans were placed around the kiln. . . . The piano parts were coated with varnish, dried and hardened in this kiln . . . the drying operation was reduced from 7 days to 36 hours. . . . The Indianapolis Chair and Furniture Company . . . provided for moisture by placing some buckets of water . . . and let live steam into the room. . . . This was evidence of prior use, such as anticipated the patent in suit.” Wenborne-Karpen Dryer Co. v. Cutler Dry Kiln Co., 290 Fed. at 627, 628.

“This application relates to the preparation of a cellulose propionate. . . . Appellant has discovered that if he hydrolyzes until the product is insoluble in benzene but soluble in acetone, it is much more flexible than the product of this patent. In general, it is the examiner’s opinion, inasmuch as it is known, that in the cellulose acetate field, the properties of the ester may be varied at different stages of hydrolysis, it would be obvious to experiment with the different stages of hydrolysis in the cellulose propionate field since the latter is the next higher number in the series of fatty esters of cellulose and that the properties of the two are somewhat similar. Appellant urges that there was no reason to suppose that the product of the Dreyfus patent above referred to could be made more flexible by controlling the hydrolysis and also that the particular solubility of cellulose acetate with respect to benzene and acetone could not be relied on to suggest improved flexibility with the propionate. While in a general way chemists may be expected to experiment with new compositions to determine the results of various treatments previously employed with somewhat related compositions, we consider that when an unexpected result is discovered by this experimentation it may at times be

regarded as entitled to patent protection." Fothergill, 33 U. S. P. Q. 290, 291.

"Claims . . . are limited to the steps of bringing the acetylizing solution containing acetyl-nitro-cellulose to a point just above the precipitation of the acetyl-nitro-cellulose and then finishing or spinning. . . . In the absence of prior art we are not convinced that the limitations just discussed are obvious or uninventive." Basset et al., 1 U. S. P. Q. 173.

"The many patents from the prior art . . . taught nothing as to the creation of synthetic condensation products, and left the prior art with mere knowledge of melting, dissolving, solidifying, pressing, turning, boring, polishing, and cutting materials. . . . To guess that the new substitute material could be used as a substitute, or that similar uses were desirable, was not invention. But to find how to make the substitution successfully was invention, and so was the discovery of methods solving the difficulties encountered." General Bakelite Co. v. General Insulate Co., 276 Fed. at 171.

"The method disclosed by the patent is, first, to cut sheets of uncolored cellophane into narrow strips, from one sixteenth to one sixty-fourth of an inch in width; second, to coat the strips with a thin oil; third, to knit the strips into a tubular fabric over a set of knitting needles continuously and in the same direction, in a moist or damp atmosphere; fourth, to dye and dry the fabric; and fifth, to cut the tubular fabric so as to form a flat piece. The proof taken at the trial satisfies me that the patent is a valid one. . . . Cellophane was supposed by those skilled in the trade to be rendered gummy and unworkable by contact with water and also to be inert to oils. . . . The oiling and the wetting of the cellophane were new and furnished the decisive steps toward achieving a new result." Millinery Braid Mfrs. Research Corp. v. Arlyn Knitting Mills, Inc., 22 U. S. P. Q. 387.

“An invention must be judged by what was in the public demesne, as well as in the inventor’s favor, as against him. Nor was there any new discovery in softeners to account for success, as we have already said. True, all that Flaherty did was to carry out what was already known, and by trial and error fix the limit which should be observed. If genius is demanded, surely he was no inventor; rather he was one of those who, taking the knowledge at hand, worked out its implications in the laboratory. There are indeed expressions in the books which, taken literally, would exclude such work from the protection of the patent laws; there are others which would not. But we deprecate such a priori rules for determining invention. Nothing has tended more to confuse and obscure the issue than the attempts of courts to lay down generalities. The issue does not admit of such treatment, for invention is always a function of the particular situation, of the conditions which preceded and followed the appearance of the composition or the machine. That this is a treacherous standard is true enough, but at least it is less treacherous than easy absolutes which fit the immediate occasion, but lie athwart any realistic treatment in the next case. At any rate to this approach we stand committed.” *E. I. du Pont de Nemours & Co. v. Glidden Co.*, 18 U. S. P. Q. 242, 243.

“The claims of the prior patent are strictly limited to gas conversion. . . . Appellant’s purpose in adding hydrocarbon liquid was to supply an excess of carbon available for combination with the excess hydrogen produced. . . . This step obviously adds utility. . . . It is stated that the addition of oil as a cooling medium lacks novelty. . . . Appellant’s purpose is not to cool but to provide . . . added carbon.” *Youker*, 28 U. S. P. Q. 144.

“We see no merit in appellant’s contention that his method is patentable over the British method for the reason that the second cooling shall be to the degree required to precipitate the wax that can be separated in an ordinary



high speed centrifuge. . . . No definite degree of chilling later in the first or second operation is taught by the appellant, and certainly no definite temperature is shown to be critical. . . . Properly rejected.” Lindgren, 25 U. S. P. Q. 367.

“The Lorival process in comparison with the process of the patent in suit falls short . . . in that a gelatinous precipitate is produced and not a gel.” Catalin Corp. v. Catalazuli Mfg. Co., 26 U. S. P. Q. 230.

“Maintaining the cheese under a vacuum to prevent admixture of air during emulsifying. . . . The Australian patent . . . teachings . . . indicate that the cheese is subjected to a temperature which would result in pasteurization. . . . The . . . vacuum in the Australian patent is stated to be for drawing off impurities and odors, and we are unable to discover any teachings in that patent that the use of a vacuum with a low temperature emulsification would improve the keeping qualities of the cheese.” Parsons, 26 U. S. P. Q. 249.

“Applicant’s improvement resides in the use of a color soluble in a continuous phase and also a color soluble in the dispersed phase . . . will minimize the difference between the apparent colors of the intact cream and of the superficial oily layer. . . . The reference discloses the idea of using a color which is either oil soluble or water soluble. . . . The reference does not fairly suggest the combined use. . . . Applicants have achieved a new and improved result . . . the claims should be allowed.” McClave, 26 U. S. P. Q. 284.

“The above process varies . . . in that the stiffened blank is to be softened by heat, instead of by a solvent, and not by heat in general, but heat within a defined range of temperature. . . . By this method of softening the drying necessary after a softening solution has been used is dispensed with, and an advantage in time and cost of manufacture is secured. . . . I do not find in Graber’s patent any sufficient indication of an intent on



the inventor's part to adapt his composition for stiffening box toe blanks, or for the production in fabrics stiffened with it of the degree of rigidity requisite for that purpose. . . . None . . . can . . . be regarded as anticipations." *Beckwith Box Toe Co. v. Gowdy*, 244 Fed. at 810, 811, 812.

"Their invention is to submerge the pipe in a weak solution of acid . . . and then remove the pipe and subject its interior to a blast of air containing abrading material. . . . The patentees' method of treating metal pipes may be but a slight advance over the prior art, it results in the production of a highly useful article. . . . As soon as competitors learned of the Garland method, they one after another appropriated and used it. . . . That others skilled in the art sought to accomplish the results attained by the patented method, and failed in their efforts . . . are evidence of invention." *Safety Armorite Co. v. Mark*, 207 Fed. at 346, 349.

"The use of caustic alkali in reducing vegetable substances to paper pulp was no novelty. Neither was boiling under pressure. But a process combining those things with a certain specified arrangement of the strength and quality of the alkaline solution, and a defined regulation of the heat and pressure, may well have been patentable if it had no other novel result than the production of paper pulp more economically." *American Wood Paper Co. v. Fiber Disintegrating Co.* (*Wood Paper Patent*), 23 Wall. at 604.

"The change Pauling made was so simple, and on the surface seemingly so small, that it is difficult at first sight, in view of the scientific staffs employed by these great companies, to understand why it was not done before, and, indeed, how it involved invention to do it. But we measure Pauling's work by results, and find that, simple as it is, it enabled this defendant company to virtually cut its production cost in half, the situation is one which stamps the step, surface simple as it is, as one of sub-

stance and merit. . . . 'Our actual cost from our records ran about \$23 or \$24 a ton. . . . We figured from the experiments we made and tests that we could reduce that cost, using a well-regulated Pauling column, to about \$10 a ton for the nitric.' " Southern Electro-Chemical Co. v. E. I. DuPont de Nemours & Co., 20 Fed. (2) 98, 99.

"The prior art, as disclosed by . . . shows the use of the essential elements namely, coal, steam, and petroleum oil. These reference patents show the whole range of such materials in any desired proportion to each other at varying pressures; thus either of these reference patents would generally cover a process in which equal quantities of powdered coal and petroleum oil were used. . . . If, however, the appellant here should disclose wherein he, by using an approximately equal amount of oil and coal, or by using oil which had the same volatizable range as his coal, would produce a result . . . which was unexpected and useful because of such proportions or quality, then the appellant might claim that such proportions or quality were critical, and constituted a patentable invention . . . no such disclosure is made." Greenstreet, 32 U. S. P. Q. 248.

"The present invention is not anticipated. . . . The Schenffgen patent contemplates no method of producing foam by an introduction of dry chemicals into continuously flowing water from a source of supply toward a point of discharge; and the Lunoe patent does not contemplate foam . . . but is merely a mechanical feeder or mixer." Pyrene-Minimax Corp. v. Palmer, 32 U. S. P. Q. Fed. 272.

"We do not think that it would be obvious to one skilled in the art to apply a higher pressure in the secondary still of Curran and also cut off his drainage pipes from his ten primary stills to his independent cracking still. While, as before stated, the prior art shown by the references taught that higher pressure was desirable for cracking the lighter components of oil, it does not follow that such

higher pressure would be desirable for cracking condensates resulting from a previous cracking operation, mingled with a substantial quantity of unvaporized oil. Certainly there is nothing in Curran's disclosure to show that he ever contemplated a use of his apparatus producing such a result as appellant secures by his process, and, as said before, we think the modifications of Curran's apparatus necessary to effect the process disclosed by appellant would be so great and substantial that they should not be obvious to one skilled in the art. For the reasons stated, we think that claims 26, 27 and 30 should be allowed." Howard, 11 U. S. P. Q. 179.

"Trumble's invention resides not in the cycle movement of oil in a closed system or structure, for that was old, but in drawing objectionable foreign matter out of the system by continuously discharging or drawing off a portion of the degraded oil as it circulates with the foreign matter in suspension and continuously feeding back an equal amount of fresh oil whereby the bulk of oil in the system, thus continuously changing in quality, shall all the while be kept constant in quantity as it goes around and around in the closed system, which Trumble called 'a closed ring.' . . . We find invention and, on the record before us, hold invention." *Skelly Oil Co. v. Universal Oil Products Co.*, 31 Fed. (2) 429, 430.

"Appellant's process . . . discharges a stream of light hydrocarbons of relatively high temperature into admixture with a stream of heavy hydrocarbons of relatively lower temperature, neither stream being substantially reduced in temperature, although the pressure of the stream of light hydrocarbons is abruptly lowered. . . . Although we agree . . . that a combination of references may be cited in order to show that all the steps of a process are old, and that invention was not involved in combining them . . . we are of opinion that, in the case at bar, the references cited, neither singly nor in combination,

suggest appellant's process as defined in the appealed claims." Harrison, 25 U. S. P. Q. 458.

"In the prior art the reflux was always contaminated by the residuum on reaching the cracking tubes. The clean circulation of Dubbs may have been due to the simple expedient of eliminating from the system all the residuum in the vaporizing chamber. Simple though the expedient was, it was new and revolutionized the cracking industry." Universal Oil Products Co. v. Winkler-Koch Engineering Co., 21 U. S. P. Q. 439.

"Appellant . . . insists that the method thus disclosed is applied only to depleted wells, that no one before had ever thought of drilling wells for the sole purpose of introducing water below the body of oil before the natural pressure of the gas above the body of oil had been reduced or exhausted. . . . There is no invention in applying the method to new oil fields." Doherty, 9 U. S. P. Q. 230.

"The really important part of the process is separately crushing and analyzing each of the grades of the rock, . . . knowing the percentage of feldspar in each separate batch, a batch of any predetermined analysis may be obtained. . . . Appellants, . . . by their method . . . have contributed to and greatly advanced the art. . . . Resolve such doubts in favor of the applicants. Peddrick, Jr., 9 U. S. P. Q. 271, 272.

"The claims . . . relate to a method of revivifying spent fuller's earth that has been fouled by use as a filtering agent in decolorizing petroleum oils. . . . Appellant's alleged novelty resides primarily in the composition used as a color solvent. . . . The Examiner holds that the composition used involves the mere bringing together of materials having known suitability. . . . The prior art relied on would lead one to believe that appellant's composition would be ineffective for the purpose. . . . The appealed claims . . . involved invention." Lemmon, 9 U. S. U. Q. 273.

“The method involves introducing into the sands a material in water solution which tends to liberate such oil as surrounds the individual grains of sand in the oil bearing stratum. The material used is broadly defined as a dispersed colloid material which is physically and chemically stable in the presence of said sands; in other words, a material which will not unite with chemical substances found in the sand such as compounds of lime and magnesia to form an insoluble substance which would tend to clog the sand and thus prevent further oil recovery. The preferred material is a hydrocarbon sulfonate which is obtained from the acid sludge resulting from the sulphuric acid treatment of petroleum or coal-tar products. When a mixture of water and the above mentioned material is introduced into the oil bearing stratum it serves in some manner to free the sand grains from the encompassing film of oil and permit movement of the oil to some point where it can be removed from the stratum by pumping. The preferred substance above mentioned has heretofore been known to be capable of breaking up an emulsion of oil, sand, water and other substances as disclosed in the Rogers patent. Substances such as broadly claimed are also disclosed in the Barnickel patent. Some of the treating materials mentioned in the British patent to Fyleman may also fall under the broad definition. In our opinion, however, none of the references clearly teach appellant’s basic method.” *Ex parte Coggeshall*, 10 U. S. P. Q. 227, 228.

“It is old to use such apparatus for flowing an oil well, but . . . appellant was the first to conceive of using such a flowing means at a time before actually required by cessation of natural flow. . . . If by making use of such a process at an unobvious time highly beneficial results can be secured . . . an invention has been made.” *Hill*, 8 U. S. P. Q. 426.

“If there is any invention in the application of appellant, it consists in one or more of the following ideas:



First, to add to a well drilling mud a colloidal material which will remain in suspension indefinitely and will not settle or precipitate out of the mud; second, to use bentonite for such purposes; third, to add weight-increasing elements to such colloidal suspension, such as hematite, galena, etc., or to add Portland cement. In view of the references, we are unable to discover any novelty in any of these ideas. . . . To one skilled in the art of well drilling with the use of fluid mud, the specification and claims of Stroud would at once suggest the desirable properties to be added to such mud. However, it is argued that Stroud suggested the addition of a substance, barytes barium sulphate, which, it is said, will not form a colloidal suspension. Admitting, for the present, this proposition to be correct, how does the matter stand? If the party skilled in the art, attempted to practice the art as disclosed by Stroud, and found barytes barium sulphate would not give him the colloidal suspension necessary, he would be fully advised by the publications and teachings of the prior art that bentonite might be used as such a colloid to obtain the properties taught to be necessary by Stroud." 11 U. S. P. Q. 188.

" . . . covers a semi-continuous process of making emulsions comprising first making a batch in which a heat liquefiable material such as asphalt is dispersed in water containing a suspended emulsifying agent, removing a substantial portion of the finished batch, then adding more of the ingredients in regulated quantities to the remainder of the original batch and emulsifying the same, and continuing." . . . Patent and Licensing Corp. v. Bituect, Inc., 21 U. S. P. Q. 143.

"The Examiner further calls attention to the patent to Turkington disclosing a phenolic resin composition which contains . . . a plasticizer . . . proportions up to equal parts of resin and the plasticizer may be used. It is the examiner's position that it would not be a matter of invention to substitute the Turkington composition for the

primers in the patents to Barringer and Ellis. Such substitution would not satisfy the limitation in the claims that the major non-volatile constituent is a non-resinous substance. Furthermore, there is no teaching in any of the patents of the particular coaction between the primer and the lacquer coating specified in the claims." Moss, 20 U. S. P. Q. 103.

"While the Examiner conceded that the specific resin described may be novel per se, yet he is of the opinion that each improvement in an artificial resin or method of producing the same does not justify the grant of a patent for each of the conventional uses thereof. In other words, granting that the specific resin is novel to employ it in an old process for impregnating material does not present patentable merit. . . . Affirmed." Haller, 32 U. S. P. Q. 308.

"It has been found that if certain organic compounds be added to the bath of pickling acid two important results are accomplished, first, the acid is inhibited from dissolving the metal after the oxide has been dissolved from its surface, and, second, the generation of hydrogen is consequently prevented. . . . In purely mechanical methods it is clear that the same series of steps generally produce the same results or results that do not vary greatly from those expected, while in processes involving chemical action the result is not apparent beforehand except in limited classes of cases which follow some uniform and recognized rule of action. . . . The action involved here is one that is not entirely understood. It is considered, however, that it is of a chemical nature rather than physical and that the steps employed are classifiable as a chemical process instead of a mechanical method. In such case we find no difficulty in concluding that each chemical agent used constitutes a proper subject for a process claim on the ground that although the mechanical steps of immersing the metal in the various baths is the same, the chemical action is different in each case, due to

the different chemical reagents, and this constitutes a different process. . . . In each case where it is found that a pickling bath containing the particular proposed reagent is not anticipated by the prior art directly or by any test of equivalency and the Examiner is of the opinion that it can be allowed as a new pickling bath, we believe it is equally true that a new process is involved in applying it." Chamberlain, 413 O. G. 1101.

"A solution containing the three salts called for in the claims on appeal is old for this purpose. . . . It appears, however, that all salt solutions which have been employed for injection into the blood are not adapted for this purpose, and appellant urges that there was nothing in the prior art which would teach that this particular combination of the three salts with the glycerine and lecithine would produce a desirable and safe solution when the combination with other salt solutions would fail. . . . We consider appellant's position well taken." Magot, 4 U. S. P. Q. 435.

"Neither the Nesfield article nor the Lornax patent are anticipatory. In their adaptation and suggestion, chlorine gas was the medium used after applying lime. The cited patents do not show a tangible suggestion as to the amount of chlorine that would be required to sterilize or purify the water. No mention is made of using a minute quantity of gas only, or that a constant relation between the quantity of gas and the quantity of water was essential." Wallace and Tiernan Co. v. Village of Le Roy, 17 Fed. (2) 594.

"None of these additional patents are even suggestive of the momentary exposure of cheese particles to live steam and their immediate removal, in a continuing operation." Lakeshire Cheese Co. v. Shefford Cheese Co., 23 U. S. P. Q. 188.

"The Examiner rejects the claims on the patent to Bossert et al. This patent discloses a combined wet and dry spinning method wherein the filament is extruded up-

wardly through a bath of coagulating liquid and then continued for a sufficient distance through an atmosphere to dry the same but this is continued as the regular process. The coagulating bath is not removed from around the filaments. . . . The decision of the Examiner is reversed." Whitehead, 23 U. S. P. Q. 251.

"This application relates to . . . treating cork discs with toxic gas by employing a partial vacuum. The Examiner calls attention to the use of a substantially complete vacuum for treating surgical articles with toxic gas, as shown by Sprague, and holds that it is merely a matter of degree as to whether a partial vacuum is employed. . . . In a general way we consider that the Examiner's position is reasonable but if, on attempting to employ the vacuum as suggested by Sprague . . . it is found that the result is unsatisfactory we are not convinced that it would be obvious that this was because the vacuum was too great." Warth, 23 U. S. P. Q. 364.

"Liquid coloring matter is sprayed upon starch and the starch is then thoroughly dried and sieved to a powdery mass. This colored mass is then thoroughly mixed with flour. . . . We do not find, however, any suggestion of mixing the colored powdery material after it has been dried with another uncolored powdery material. . . . This last step, appellant contends is very important. . . . The claim may be allowed." Morris, 3 U. S. P. Q. 21.

"The Marquette reference . . . cords under tension and properly spaced by corrugated rolls, are passed between sheets of unvulcanized plastic rubber, through fluted rollers. . . . Appellant claims his process of pressing the cords into the rubber and the production of a flat-surfaced fabric differs radically from the Marquette process. . . . The contour of the surface is an unimportant mechanical detail." Midgley, 3 U. S. P. Q. 117.

"Appellant appears to have been the first one to discover that preservatives did not always properly enter the pores of the fruit . . . nor is there any evidence that

preservatives have been ever employed in the washing water and therefore been used at the time when the rubbing action usually occurs. . . . The art cited does not properly warrant the rejection of claims that include the step of rubbing the mold-inhibiting agent on the fruit.” Brogden, 3 U. S. P. Q. 130.

“Several of the claims include the step of removing the excess preservative. . . . Appellant apparently has discovered that a certain amount of this may be removed without materially impairing the usefulness of the preservative. . . . We do not consider that Claim 7 is drawn to an unpatentable combination.” Brogden, 3 U. S. P. Q. 130.

“With the use of pectin with acid, aqueous material and solids of fruit juices and/or sugar a type of jelly not obtainable with agar-agar, gelatin, gum arabic and gum tragacanth is obtainable.” Jameson, 23 U. S. P. Q. 181.

“It is obviously true that to add sugar to fruit juice would tend to sweeten the produce. . . . Appellants seem to have selected a sugar which will aid in the trying operation so that less pectin is necessary. The present specification supports this teaching of the value of sugar as an aid in the drying operation and the prior art does not present such teaching. . . . The claims . . . should be held allowable.” Jameson, 23 U. S. P. Q. 181.

“Appellant contends that when green or wet wood is boiled in a solution of sugar that the sugar is particularly efficient in eliminating the moisture. . . . Appellant also urges that in oil treatments of the character disclosed by the patents cited that only dry wood is to be heated. . . . With the substitution . . . of oil for water with sugar, it is unnecessary to dry the wood either before or after treatment. . . . The claims should be allowed.” Rice, 3 U. S. P. Q. 151.

“This application relates to preparing rubber mixtures of high filler content by adding the filler to the rubber latex before coagulating and incorporating a rubber soft-



ener with the mass while still pasty and combining the dried mass with other rubber, on the mixing mill. . . . The references show the use of precipitated barium sulphate in rubber but none . . . show . . . in incorporating it in latex and then coagulating and mixing with other rubber. . . . We do not find the step of adding a softener specifically to newly coagulated latex and filler batch while the mass is still highly pasty. . . . Claims allowed.” Dinsmore, 2 U. S. P. Q. 28.

“Difficulties that develop under the Frasch system due to the subsidence of layers of earth or rock into the space left by removal of sulphur . . . necessitating the abandonment of the partially exhausted sulphur deposit. . . . Appealed claims . . . set forth appellant’s invention of maintaining a predetermined or balance pressure by withdrawing cold water from the lower portion of the deposit and hot water from the upper portion of the deposit and the introduction of the withdrawn hot water, and we consider these claims allowable.” Judson, 2 U. S. P. Q. 180, 181.

“Applicants claim that after extensive research they have found that a small proportion of gelatine either suspended in the juices or liquids of the contents of the can or preliminarily applied as a thin coating on the inside of the can serves to inhibit such corrosive action. The prior art, particularly the British patent to Wurzburg and the patent to Gamage appear to disclose and appreciate the fact that gelatine tends apparently in an indirect mechanical way to prevent corrosion of metallic containers by corrosive constituents of the contents placed therein. While each of these patents discuss as the corrosive properties, particularly of flesh of marine animals such as fish, lobsters and other crustacea and the use of gelatine in canning them, they also attribute other functions to the gelatine, namely, that of mechanically supporting the pieces of flesh out of contact with the wall of the can and in fixed position so that they will not be churned about

and disintegrated during the shipping and handling of the can. . . . It is stated in the specification that where the gelatine is added to the contents before charging them into the can that less than 1 per cent is used. It is our opinion that this conception that relatively small proportions of gelatine will serve in this relation or the specific way of applying it are not disclosed in the prior art. It would seem to be a particularly unobvious feature in the case of fruits that such small proportion of gelatine would have the power to inhibit corrosion. We believe the appealed claims are limited to patentable merits over the cited art." McConkie, 15 U. S. P. Q. 140, 141.

"It is well established that, while a change in the proportions of a combination shown to be old, such as is here involved, may be inventive, such changes must be critical as compared with the proportions used in prior processes, producing a difference in kind rather than degree. . . . Appellant's specification does not state that these proportions are material or that they are novel. . . . The difference . . . is . . . one of degree." Lilienfeld, 20 U. S. P. Q. 57, citing Richter 53 Fed. (2) 525, Wells, 56 Fed. (2) 674.

"It is no answer to his claims that he stood on the shoulders of those who went before; all inventors do so. It is enough that he used the earlier materials, known to be appropriate for his problem, in a new way, prescribing the proportions, the preparation by boiling, the needed viscosity. Indeed, it is not strictly true even to say that he used materials ever used before as an electrolyte. In the raw they were old, but his treatment of them resulted in new compounds, not earlier used as an electrolyte at all. We think that the claims are valid." Aerovox Corp. v. Concourse Electric Co., Inc., 18 U. S. P. Q. 55.

"We do not consider that Claims 9 and 11 patentably distinguish in including the limitation that not less than 2 per cent of the preservative or the sodium hypochlorite

is employed. Hypochlorite is an old form of preservative." Brogden, 3 U. S. P. Q. 130, 131.

"It being clear that Lilienfeld has disclosed a proportion of water within the range of water disclosed by appellant, patentability of appellant's claims may not be predicated alone upon the proportions of water claimed by him. The question remains whether there was invention in increasing the number of parts of alkali per one part of water from about .7 of a part of alkali to one part of water to at least one part of alkali to one part of water. . . . We think it should appear from the record that the increased proportion of alkali . . . produces a result different in kind. . . . We find nothing . . . to indicate that the proportions are critical. . . . The results . . . differ only in degree." Dreyfus 24 U. S. P. Q. 55.

"Lauman, however, ascertains in advance the quantity of water necessary to do the slaking. . . . Was the modification of Adams' process by ascertaining the quantity of water needed, and introducing it at the start, an act of invention? . . . We are satisfied . . . not." *Lauman v. Urschel White Lime Co.*, 136 Fed. at 192.

"It is then stated that appellant has made the discovery that, by pulping the wood 'in an acid sulphite cooking liquor containing in solution combined and free  $\text{SO}_2$  in approximately equal proportions of at least 3% to 4%' (that is, as we understand it, 3% to 4% of each of the combined and free  $\text{SO}_2$ ) a pulp is produced lighter in color than the pulp produced by the former process, and capable of forming papers of more than double the strength of the papers formed from the pulp produced by the former process. The pulp so formed by appellant's process is claimed to be, in its unbeaten condition, long in fiber and shiny and to have a decided rattle when shaken. It is said to have a cellulose content of 85% to 93% and a pentosan content of 5.0% to 7.5%. . . . The quotation from the Catlin patent, *supra*, is conclusive, we think, of the fact that Catlin taught the art the possibility of using

varying proportions in the formation of the cooking liquor, and we are not impressed that appellant's argument to the effect that one practicing the teaching of Catlin would naturally use cooking liquor of the 'strength . . . to which he (the user) was accustomed' is sound. . . . We feel that the process claims were properly disallowed." In re Richter, 11 U. S. P. Q. 252, 253.

"This application discloses a process for manufacturing artificial filaments, designated rayon, in which the filament is hollow, that is, it is expanded by a series of cavities which may be separated in bubble-like formation axially elongated. . . . The prior art states that zinc sulphate may be added up to the extent of 4 or 5% of weight and the German patent, No. 260479, contains the further disclosure that it is considered objectionable to have more than 5% of zinc sulphate present and that if greater percentages are used objectionable results follow. It is the opinion of the examiner that this is a disclosure of percentages higher than 5% and probably reaching appellant's minimum of 6% and that appellant's claims are therefore necessarily anticipated. We are unable to agree with this, however, for the reason that the reference to more than 5% in the German patent does not necessarily extend to appellant's minimum of 6%, since in this case probably the percentages would be measured in smaller increments than by entire units. . . . However, if appellant, as claimed, found that some unexpected advantageous result follows the use of more than 6% of zinc sulphate, it is believed that allowance of the claim is warranted as constituting improvement and novelty." Picard, 11 U. S. P. Q. 64.

"Appellant . . . stresses the argument that the feature of agitation lends patentability to the claim over the prior art, that none of the references . . . shows the introduction of chlorine liquid, or chlorine in any other form, at a time when the mixture is agitated. . . . We are in agreement." Cirves, 32 U. S. P. Q. 201.



“Appellant has discovered that by controlling the proportion of water, the strength of the ammonia may be increased, and ammonia between 40 and 80 per cent in strength may be employed . . . examiner refers to the McBride publication, where it is stated . . . that while the ammonia is of 25 per cent strength, 30 to 35 per cent may be employed. . . . It is our opinion that the paragraph is ambiguous and that therefore it cannot be relied upon. . . . Appellant's departure from the art may only differ in a small degree but if he has made a substantial advance by passing over a line that others had not found practical, we consider that he is entitled to protection.” Harvey, 31 U. S. P. Q. 250.

“More specifically the liquid toluol is continuously passed downward through a glass tower through which suitable light rays may pass, while the chlorine gas is caused to simultaneously pass upward through the tower in intimate contact with the descending hydrocarbon liquid. There are certain additional steps specified in some of the claims which appear to us to be obvious enough in view of the state of the art and we regard the invention, if present, to reside in the process as recited in the broader claims. . . . In the process followed by applicant there is a selective substitution of hydrogen in the methyl radical with a production principally of benzyl chloride. The applicant presses the view that by the old methods there was not the certainty that there would be produced a chlorinated toluol of commercial value since the very complex reactions could not be relied upon to be restricted to the specific reaction which the applicant obtains between the toluol and the chlorine gas; that is, the chlorination of the benzene derivatives in the side-chain methyl radical. It is urged by applicant that neither Auger nor Maze suggests the unexpected result or advantage obtained by applicant in his treatment of toluol with chlorine gas wherein hydrogen is substituted in the methyl radical. We are inclined to agree with the applicant that the



references of record do not disclose nor suggest the specific method followed by applicant and it was not obvious how their apparatus would need to be modified to carry out applicant's process." Conklin, 11 U. S. P. Q. 151, 152.

"The examiner takes the position that it is immaterial whether a dry coloring material or a coloring matter in solution is used as any dye will enter the pores of the shells and protect the nuts against deterioration, the novelty in this case residing in the selection of particular dyes. Applicant on the other hand urges that there is nothing in the Pratt patent which suggests the impregnation of the nut shells with a solution of coloring material which will effect sealing of the pores and prevent deterioration of the nuts. Applicant further urges that while Naphthol Yellow S and Orange 1 are the two dyes which he prefers his invention is not limited to the use of these two dyes. We do not find any suggestion in the Pratt patent that the deterioration of the nuts may be retarded by closing the pores of the shells with a dyeing solution and as we are not convinced that a dry dye such as used by Pratt would have this effect we are of the opinion that claims 34 and 35 which cover a method of improving the appearance of the nuts and retarding their deterioration comprising impregnating the shells with a dye solution should be allowed. Claim 32 covers a method of improving the appearance of nuts by impregnating the shells with a solution containing Naphthol Yellow S and claim 33 with a solution of Orange 1. We do not consider in view of Pratt that it would be a matter of invention to improve the appearance of nuts by dyeing the shells with a particular dye giving the desired color nor to use such dye in solution form." Ex parte Good, 13 U. S. P. Q. 146.

"Process of electro-plating . . . two important features involved, one of which relates to trivalent chromium in the bath and the other to maintaining less than 40 parts

by weight of  $\text{CrO}_3$  to 1 part  $\text{SO}_4$ . . . . We have no definite holding by the Examiner . . . as to why the particular ratio is an obvious one and even if trivalent chromium does develop during the operation apparently it had generally been regarded as objectionable and we know of no reason why it would be obvious to provide this ingredient so that the 40 : 1 or less ratio could be properly employed. . . . The Examiner is reversed." Barber, 20 U. S. P. Q. 199.

"Manufacture of . . . pencil lead or crayon. . . . By the present process, each of the materials . . . is reduced to a much finer condition by grinding it in a deflocculating medium, such as magnesium oleate . . . or . . . and mixed while in such deflocculated condition, after which the water may be removed by evaporation or the material may be flocculated. . . . It is stated there is a saving in initial cost of machinery for grinding, of 65 per cent to 70 per cent in power, 65 per cent to 70 per cent in space, and 80 per cent in time. . . . Allowed to stand . . . the deflocculated mixture will remain in its dispersed condition. . . . The Examiner holds that what appellant has done is an obvious application of the teachings of the Acheson patents. . . . The Acheson patents have nothing to do with the preparation of a mixture. . . . The appellant is entitled to the benefit of any doubt." Goldsmith, 4 U. S. P. Q. 38, 39.

"If appellant is the first to discover that in complex compositions, such as those treated by Steenbock, ergosterol is the particular ingredient which can be activated and which, when in its free condition and treated with ultra-violet light, will be converted into a product much more effective for anti-rachitic purposes than those previously known, we believe that it is clear that appellant is entitled to protection on his contribution." Windaus, 15 U. S. P. Q. 46.

"The new method absolutely prevents, prior to the drying step, the formation of any self-sustaining gel in any

part of the mixture, and so dilutes and manipulates the mixture as to create a material in the nature of a gelatinous precipitate made up of tiny gel particles distributed in a mass of mother liquor which liquor is too great to be incorporated in the gel structure at any stage, and which prevents the formation, prior to the drying stage, of a self-sustaining gel mass from the gel particles. The new process is clearly within the disclaimer of the patent and, therefore, clearly outside of the protection of the patent. This is not merely a matter of delayed formation of a firm gel. It is a different method of procuring such a gel." *Arizona Minerals Corp. v. American Doucil Co.*, 14 U. S. P. Q. 101.

"We do not think it follows that it was obvious to one skilled in the art that it was desirable to remove a portion of the surface of partly cured concrete, and that the bituminous paint would penetrate deeper into the pores of the surface resulting from such removal than if applied to partly cured concrete without such surface removal. Appellant's specification states that objectionable features named in the specification are found in the upper surface of the concrete to a depth of approximately one-sixteenth of an inch, and his invention lies in the removal of this defective material, when partly cured, and then spreading a coat of bituminous paint material, afterwards treating the said paint material with a coat of sand. We do not think the process claimed is suggested by the references, and we are of the opinion that the process claimed involved the exercise of the inventive faculty." *Stubbs*, 13 U. S. P. Q. 360.

"It seems to us that it would not be obvious to the skilled worker in the art involved as to what material should be used to obtain a chemical reaction with hydrogen under the conditions of appellant's process, for the purpose stated by appellants, and therefore they are not entitled to broad claims including all material which will react with hydrogen under the conditions specified, but

only to claims specifying materials which appellants have discovered will so react, and which they have disclosed in their application." Gibbons, 21 U. S. P. Q. 123.

"There is no teaching in the prior art of the utility of temperature control during the emulsification . . . and in making that discovery Kirschbraun produced a patentable invention." Patent and Licensing v. Bituect, 21 U. S. P. Q. 142.

"Emulsions made with bentonite or materials having the characteristics of bentonite differ from emulsions made with common clays, . . . enabled emulsions . . . to be used for new purposes." Patent and Licensing v. Bituect, 21 U. S. P. Q. 142.

"Inasmuch as appellant has solved a problem which has evidently been troublesome in the dry cleaning art by selecting as a substitute for fuller's earth, an activated absorbant earth which has been used in the petroleum refining industry for clarifying medicinal white oil, it seems to us he is entitled to patent protection. There is no suggestion in such old use that this activated absorbent earth would necessarily absorb the type of dyestuff under consideration, if fuller's earth would not absorb it." Myers, 31 U. S. P. Q. 238.

"It is the examiner's opinion that the relation between the manufacture of black powder and of gelatin dynamite is of such a nature that the use of a roller mill for mixing black powder would suggest its employment as a working means for gelatin dynamite. . . . We are not convinced that they suggest the use of this mill for this purpose. . . . The appealed claims should be allowed." Wilson, 32 U. S. P. Q. 83.

"The issue, baldly stated, is whether invention is involved in applying the coagulant to the surface of an impervious form instead of to the inside of the porous forms of the Klein and Szegvari patent. . . . Appellant . . . then associates the form . . . with latex. . . . Proc-

ess claims should be allowed.” Twiss, 24 U. S. P. Q. 113, 114.

“Instead of mixing a solid and a liquid, and straining the mass to remove undissolved particles, and evaporating the liquid in an air-tight condenser, the invention mixed two solids and added a liquid . . . they relied upon heat and pressure to effect or complete the transformation.” Celluloid Mfg. Co. v. American Zylonite Co., 26 Fed. at 697.

“The artizans . . . were unable to produce such wire by means of anything derived from the flat plating art. . . . This is the first patent in the art which has achieved practical success and been put into extensive use; that other attempts had resulted in failure. In Tannage Co. v. Donallan, 93 Fed. at 812, Judge Colt says: ‘As a practical and commercial method . . . it has proved very successful, and may be said to have revolutionized this branch of the tanning art. . . . In the construction of a patent of this character and in harmony with what we believe to be the principle and purpose of the patent laws of the United States, the court is naturally inclined to sustain it, unless it clearly appears to be invalid under the law.’ . . . We conclude that the patent must be held valid.” Burdon Wire & Supply Co. v. Williams, 128 Fed. at 932, 936.

Feidt, . . . furnished an admixture of alcohol and phosphoric acid, to be applied to the steel in the mode set out in the specification. The cause of the trouble was removed. The paint stayed on. The remedy was a complete success. . . . Ross does teach that a clean surface of steel may be preserved . . . by the use of phosphoric acid. . . . But Feidt cleans, prevents rusting . . . Coslett starts with iron or steel ‘thoroughly cleaned.’ It is then immersed in or ‘otherwise subjected to’ the action of a dilute aqueous solution of phosphoric acid. . . . Feidt, however, does not use for his force the Coslett compound . . . neither the Ross nor the Coslett patent constitutes an anticipation of the Feidt process.” Ameri-



can Chemical Paint Co. v. C. R. Wilson Body Co., 298 Fed. at 311, 312, 313.

### **XIII. Omitting Old Step**

“His only discovery was . . . that by altogether omitting one of the steps of the former process, the grinding and mixing under the muller stones, and mixing in the mixing machine by means of steam, a great improvement was effected in the result. . . . But though it be true that the new process does require greater care, and even greater skill . . . this does not change its character as being that of a process, nor does it materially affect its utility.” *Lawther v. Hamilton*, 124 U. S. 6, 7. See *Standard En. S. Mfg. Co. v. Graywood M. Co.*, 1 Fed. (2) 667.

“They omitted from the Dietrich process a step which Dietrich and all others considered essential, namely, the evaporation of the moisture which had been introduced in the steaming process.” *Pacific Contracting Co. v. Bingham*, 62 Fed. at 284. See *Fischer*, 431 O. G. 779, and *Aerovox Corp. v. Concourse Electric Co.*, 65 Fed. (2) 386.

“The appellant’s improved process . . . being to treat the grains whole or only slightly broken instead of reducing them to small fragments. . . . The result is important and constitutes the whole difference between commercial success and failure. . . . I think this application presents patentable subject-matter.” *Ex parte Blumer and Schlagenhauer*, 72 O. G. 1783. See *Steik*, 31 U. S. P. Q. 343.

“Plaintiff contends . . . that the omission from the Collis process of vacuum conditions and the use of spray pipes at the ends of the drum constituted patentable invention. . . . In neither specification nor claim does Collis exclude . . . the vacuum feature. . . . The vacuum in the Ekenberg operation was a condition rather than a step . . . a preliminary step. . . . The omission by Collis of both the step and its sole function or benefit did not constitute invention.” *Collis Products Co. v. Cadillac*

Produce Co., 300 Fed. at 331. See Porter, 20 U. S. P. Q. 301.

#### XIV. Of Aggregations

“These patentees cannot honestly claim to have done anything more than add an old series circuit as another member to an old multiple system of electric distribution. . . . We have great difficulty in regarding the groupings of the patent in suit as anything else than mere aggregations of old elements. . . . We are clearly of opinion that the exercise of the faculty of invention was not required.” *Salem Electric Co. v. Thomson-Houston Electric Co.*, 144 Fed. at 978, 979.

“In all processes, the individual steps are successive rather than simultaneous, and to make a valid claim for a combination it is not necessary that the several elementary parts of the combination act simultaneously.” *Danbury and Bethel Fur Co. v. American Hatters and Furriers Co.*, 54 Fed. (2) 344.

“To make a carrot of the excellence of that of Parks by adding to one, which was a failure, another which was worse, is a result which is not old or obvious, but new and surprising.” *American Hatters and Furriers Co. v. Danbury and Bethel Fur Co.*, 47 Fed. (2) 271.

“The Douglas patent clearly discloses all of the elements of the process claims here in issue except that which covers the precipitation by means of alcohol. . . . The fact that the disclosure in the Douglas patent of converting the starch in the solution by the action of a suitable chastic enzyme was for a different purpose . . . is . . . immaterial. . . . The process of precipitation shown by the Leo reference . . . is essentially the same. . . . There is no invention.” *Douglas*, 8 U. S. P. Q. 545, 546.

“The issue to be determined . . . must rest upon a clear statement by the wealth of authorities between what

is a combination patent . . . and a mere aggregation.” (Citing many authorities). *Jones McLaughlin, Inc. v. Amerada Pet. Corp.*, 4 U. S. P. Q. 22.

“The device and process of the plaintiff purporting to be covered by his patent is in fact an aggregation as distinguished from a true combination, which latter alone is patentable. Oil by the use of compressed air or dry gas has for many years been caused to rise to the surface and to flow as if from natural causes. . . . It is a common and natural process that the product thus produced should, upon its contact with the air separate itself.” *Jones McLaughlin v. Amerada Petroleum Corp.*, 8 U. S. P. Q. 419.

“Cimorosi has . . . combined several prior ideas or devices to create a new and . . . useful result in the making of much more efficient toy torpedoes. . . . It was something more than the “exercise of mere skill of the calling or an advance plainly indicated by the prior art.” *Victory Fireworks and S. Co. v. Commercial Novelty Co.*, 31 U. S. P. Q. 354.

“He patented a composition of matter consisting of four elements. . . . Assuming that all were old it is . . . absolutely certain that the combination was new. ‘It is . . . the combination that is the invention, and is as much a unit in contemplation of law as a single or noncomposite instrument. . . . Familiar illustrations of this legal fact are steel alloys where the steel base, like the flaxseed base here is old. So also are nickel, chromium, tungsten, molybdenum old. Yet many combinations of these old elements whose individual characteristics and behavior were well known have been held inventions of high order.’” *Radiator Specialty Co. v. Buhot*, 4 U. S. P. Q. 208.

“The only novel feature which the patentee claims to have introduced consists in so arranging the various operations that the same movement of the die cuts the letter out, and presses it upon the surface where it is to be affixed. It would seem not to require the exercise

of any inventive faculty to devise such a process.” *Schwartz v. Housman*, 88 Fed. at 522.

“The proofs bearing on the difficulties and obscurities the electrical art in rotary converter practice had before it satisfies us that Lamme’s problem, far from being a mere adaptation of recognized agencies to accomplish a simple expedient was a complex, obscure electrical difficulty which involved invention of decided merit.” *Westinghouse E. & Mfg. Co. v. Allis-Chalmers Co.*, 176 Fed. at 366.

“Crooker prepared his surface with an insoluble black dye, while in the prior art the surface was prepared by staining and burnishing. Crooker, however, was not the first to omit burnishing. . . . On the whole, as dyes of all kinds, including aniline black, had previously been in public and general use . . . there was no invention in applying them, as distinguished from stains and pigments, to leather.” *Electric Boot and Shoe F. Co. v. Little*, 138 Fed. at 733, 734.

“Even in mechanical patents, the fact that the material is transformed or affected by successive operations does not necessarily prevent a valid combination patent upon the group of successive agencies . . . but in the electric art, the difficulty of demonstrating mere aggregation must be greatly increased.” *Dunham v. Kelley-Koett Mfg. Co.*, 246 Fed. at 849.

“The essential steps or features involved are first shaping a round bar or thick walled tube by some method . . . that will produce a longitudinal grain in the metal then cutting this bar or thick walled tube into short lengths and extruding the short lengths in an axial direction into the final thin walled tubing then forming the transverse dents in the wall. . . . The usual way . . . starting with a thick disk . . . has a grain running across it. . . . The rejection based on aggregation is not believed to be warranted.” *Robinson*, 2 U. S. P. Q. 21.

“The patent is a combination . . . (1) Enveloping the meats in a covering of fibrous or woven material; and (2) subjecting the same to the action of a continuous current of air of suitably low or regulated temperature. Neither was new. . . . A new and useful result was found . . . a more merchantable article.” *Bate Refrigerating Co. v. Gillett*, 9 Fed. at 388.

“Even where all steps are old, anticipation is not established, unless it further appears that the steps (old individually) were employed in relation to one another as disclosed in the patent.” *Wisconsin Chemical Co. v. Chute*, 261 Fed. at 92.

“It is also contended that the process described is a mere mechanical process—an aggregation of functions. . . . The treatment of paper in this instance is of a character to change its quality, giving it new and useful attributes. The moistening of it, and the treatment in a moistened condition, is more or less chemical in its character.” *American Fibre-Chamois Co. v. Buckskin-Fibre Co.*, 72 Fed. at 514, 515.

“The real invention was made when the ferrule with the porcelain crown was adopted. . . . It is no invention, within the meaning of the law, to perform with increased speed a series of surgical operations old in themselves, and in the order in which they were before performed.” *International Tooth Crown Co. v. Gaylord*, 140 U. S. at 62, 64.

“His claim is for ‘chemically combining the carbonate or bicarbonate of soda with the impurities mixed with common salt after it has been crystallized.’ . . . It is the union of these two independent patented processes . . . which one of the parties desires to claim. . . . there is no mingling of the processes . . . no cooperation in the sense that makes the use of both processes necessary to the operation of either. . . . In other words . . . a mere aggregation of processes, each accomplishing independ-



ently of the other its well-known result.” *Rice v. Burt*, 17 O. G. 799.

“If a process for the reduction of any and all metallic oxides is not patentable, it is difficult to say how the same process for one specific metal oxid—the oxid of zinc—can be patentable. . . . The addition of one well-known process to another well-known process does not constitute invention unless some different or better result is produced than that which had been previously obtained.” *Mond v. Duell*, 91 O. G. 1437.

“A great number of apparatus and process patents for coffee making were cited. . . . That the entire process of the applicant is not anticipated in any single reference is unimportant. . . . There is no essential relation between the successive operations of preparing, filtering, storing, and dispensing the beverage.” *In re Harris*, 170 O. G. 484.

“The Shuman patent was evidently the first practicable method of making wire glass . . . we think it the proper subject of a process patent. . . . He was not the first to conceive the idea of wire-glass, but was the first to make it possible. . . . ‘In the law of patents it is the last step that wins.’” *Streator Cathedral Glass Co. v. Wire-Glass Co.*, 97 Fed. at 954, 955, 957, 964.

“The use of heated dies in embossing figures upon sheet celluloid was well known . . . but . . . Hafely’s method of forming album covers of celluloid . . . was not practiced before he disclosed it. . . . The experiments of Lefferts . . . and his failure, show the difficulty, and show that Hafely’s method was not one which even an experienced workman in celluloid would hit upon.” *Horn v. Bergner*, 68 Fed. at 431.

“I am not satisfied that the idea of making nuts out of iron in the ‘waxy’ condition of welding heat, and subjected to such pressure on every side when the mandrel passes through the blank, was ever present to the mind of Scott, or that his machine was designed or competent

to perform the work of Kenyon's machine upon iron in that condition. . . . The difference is that between success and failure." *Wood v. Cleveland Rolling Mill Co.*, 4 Fish. 550.

"This use of the liquid glue before drying differed in no essential respect from the use of the liquid glue which had been obtained by melting the dried glue of commerce, and certainly does not rise to the dignity of invention." *Leggett v. Standard Oil Co.*, 149 U. S. at 295.

"The first step is merely the making of the thing claimed in the product patent. There is no invention in cutting off the superfluous glass . . . 'forming the other face of said piece of glass as desired,' . . . is not new. . . . The plaintiff claims that Conner was the first . . . to shape two spherically disposed surfaces on one side . . . and afterwards to grind the other side. . . . If it was not done before, it must have been because nobody ever wanted to do it. . . . In its essence, it is a claim for every way of making the patented product. It is not a claim for a particular process." *One-Piece Bifocal Lens Co. v. Bisight Co.*, 246 Fed. at 461, 462.

"Kayser states that the object of his invention is to utilize the natural deposits of marl, consisting . . . of calcium carbonate and aluminum silicate. This compound contains no alkali, and Kayser adds one. . . . Applicant starts with a product that does not contain one of the known elements of the Kayser compound. . . . He adds . . . that this amounts to invention. . . . If any metallurgist or one skilled in the art were given an aluminum silicate of known elements and was asked to treat it according to the Kayser method, 'he would add to the silicate the ingredient or ingredients necessary to make the mixture used by Kayser.' " *In re Cowles*, 297 Fed. at 540.

"I agree that, if you put them side by side before a photographer, he would say that they are convertible ways of reaching the same result. That does not trouble

me in the least in holding that . . . the other may be invention. One has proved cheap and quick. . . . I ask the conventional question in such cases: If it was so plain, why did nobody do it? Why did they ignore the suggestion of this article, and why do they now imitate Lane? I know no answer to that question except to say that nobody was foresighted enough to see that the photographic plate might easily be changed for a sensitized paper." *Lane v. Craftsmen Film Laboratories, Inc.*, 7 Fed. (2) at 289.

"The present application . . . consists in the use of pulverized copper matte to remove the 'skunk' from oil. . . . This powder . . . has never been used . . . yet I am not able to agree with the contention of the appellant that it is in itself a new article of manufacture, copper matte having been known. . . . The use of pulverized copper matte for purifying oils is an improvement upon the use of the mixture of pulverized copper oxide and pulverized iron oxide. . . . It constituted an improvement such as is not to be expected from those versed in the art and required invention." *Ex parte Frasch*, 77 O. G. 1427.

"Appellant's problem went beyond the mere printing of a picture. His task was to transfer to a more or less irregular metal surface a facsimile of the intricate grains of wood. . . . He conceived the idea of employing this etched plate in combination with the Herzog roller and thus produced a new and useful result." *In re Henry*, 339 O. G. 5.

"The starch milk of the patent in suit is not a liquid charged with 'fragments of maize,' . . . but a liquid in which fragments of starch, previously softened, have been dissolved, and are so held in suspension. . . . It is by force of the process patent in suit that the idea suggests itself that the density of the water in the Cavaye tank may be affected in some degree by starch particles in suspension. The conception of a starch milk formed

by the disintegration of previously softened starch in the grains, and maintained at such density as to float and carry off by its overflow, from a surface otherwise undisturbed, the germs of corn, while the hulls sink through such liquid to the bottom, is not found or in any way suggested by the Cavaye patent." *Chicago Sugar-Refining Co. v. Charles Pope Glucose Co.*, 84 Fed. at 988.

"The claim . . . is for an improvement in the process of construction of wooden pulleys. . . . There are but two steps in the formation of the rim of the pulley. One of these is the application of glue to wooden surfaces to secure their adhesion; the other is securing this adhesion through pressure. The statement . . . is sufficient to show the absence of novelty." *Dodge Mfg. Co. v. Collins*, 106 Fed. at 937.

## CHAPTER 8

### OF ANTICIPATIONS BY PRIOR USES AS RELATED TO COMPOSITIONS OF MATTER AND MANUFACTURES

The preliminary words at the beginning of Chapter 7 apply equally to the subject-matter of this chapter. Certain further questions have come before the Courts however, in connection with prior uses which are peculiar to manufactures and compositions of matter.

#### WHAT THE COURTS HAVE SAID

##### **I. In General**

“This was never an article of manufacture; . . . it does not come under the requirement of the statute, that the article must be either in public use or offered for sale. Apparently it was done only once in his shop, . . . as an intermediate step in the manufacture of another article. . . . It would be improper to say he had anticipated the invention, merely because in one stage of an incompleated process the spools were like the plaintiff’s.” *Knee v. Karmin*, 274 Fed. at 723.

“It quite frequently happens that an article well known in the art may be constructed by a new and patentable process. In *re Lawson*, 17 C. C. P. A. (Patents) 1006, 39 F. (2d), 667.” *Harvey*, 22 U. S. P. Q. 85.

“The maker of the article intended to make and use it for the purpose for which the patented article was designed and used. . . . It is immaterial whether the maker fully appreciated all of the advantages in such a heel.” *Vulcan Corporation v. United Shoe Machinery Corporation*, 82 Fed. (2) 195.



“Just as an old process may be practiced by a new machine, or a new process by machinery which may be either old or new, just so a new article of commerce may involve the exercise of the inventive faculty even though on producing it a known method is resorted to. Of course there always remains the question as to whether the new article was the result of invention or was inevitably suggested to those skilled in the art by what had gone before.” *General Electric Co. v. Sava Sales Co.*, 29 U. S. P. Q. 62.

“It is not necessary that a reference disclosing an article should disclose how to make the article in order that it be a good reference against an article claim.” In re Fink, 16 U. S. P. Q. 12.

“Baker conceived a new method of burning dolomite. Its novelty consisted, not in disregarding . . . old methods, but in employing both of them. . . . The result . . . was . . . revolutionary. . . . Nothing is added to dolomite . . . it is freed of its objectionable features, and it is so transformed that . . . the product is raised from the low level . . . to the high level of equality with Austrian magnesite. . . . We regard magdolite as ‘a new article of manufacture.’ ” *J. E. Baker Co. v. Kennedy Refractories Co.*, 253 Fed. at 741, 742.

“Plaintiff’s method patent is valid, it follows that the object produced by that method is also an invention, because it is a tubing electrically butt-welded and presenting in the weld ‘recurrent variations in metal texture,’ etc. (claim 3), of which the ocular proof is the ‘stitched’ weld seam.” *Elyria Iron and S. Co. v. Mohegan Tube Co.*, 7 Fed. (2) at 830.

“The patented product consists of paper stock ground to a pulp, and permanent particles of printers’ ink so minutely and uniformly distributed throughout as to produce an even tint. . . . It was stronger in fibre and superior in quality, and . . . produced at less expense. . . . Complainant is entitled to the benefit of the pre-

sumption in favor of the validity." *McEwan Bros. Co. v. White*, 63 Fed. at 571.

"When such a mechanically combined material is old and in common use, and has already been the subject of numerous patented improvements both as to the proportions of ingredients, the processes of manufacturing, and methods of laying the pavement of it, to say that a person who has merely altered the proportions of the ingredients or the process of combining them has discovered a new composition of matter in the sense of the patent law, is to trifle with language. To be a new combination of matter the product must have some distinctly new property, or be applicable to some new use." *Van Camp v. Maryland Pavement Co.*, 34 Fed. at 743.

" 'A set of artificial teeth . . . consisting of a plate of hard rubber, with teeth.' . . . A new product was the result, differing from all that had preceded it, not merely in degree of usefulness and excellence, but differing in kind, having new uses and properties. It was capable of being perfectly fitted. . . . It was easy for the wearer, . . . light and elastic, yet sufficiently strong and firm. . . . There were no crevices. . . . They were unaffected by any chemical action, . . . very inexpensive. . . . Devising and forming such a manufacture . . . was invention." *Smith v. Goodyear Dental Vulcanite Co.*, 93 U. S. at 494.

"No knitter had produced Astrakhan cloth before Bywater. . . . One criterion of invention is that others have sought and failed, even when the process is so simple, when discovered, that many believe they could have produced it if required." *Hanifen v. Armitage*, 117 Fed. at 849.

"The ruffle in question . . . was not the subject of invention. It embodied no new idea whatever. In mechanical construction, it was identical with what had been made by hand long before. If it possessed greater beauty, greater evenness and regularity of its plaits,

than the ruffling made by hand, that was due to the machinery by which it was made, and not to the invention of the maker in suggesting any novelty. . . . It was not new in such sense as to be patentable." *Wooster v. Calhoun, et al.*, 6 Fish. 514.

"Fabric was made extensively and was in general use, which answers in every particular to this claim of the complainant. . . . True, these fabrics do not appear to have been woven of a width sufficient for gores of boots, . . . does not appear to have been of suitable fineness to render the fabric attractive. . . . The fabric, as claimed . . . was not new." *Smith v. Elliott*, 1 O. G. 331.

"In the fabric of the carpet art, and the two-ply fabrics of the other arts . . . the devices or structures were not subjected to the deteriorating influences of steam and heat, and the binder-warps were not employed to perform any function with reference to such influences. . . . There was invention sufficient to sustain the patent in the fact that the patentee introduced the smaller binder-warps into the art of making drier-felts and adapted them to perform a new function." *Fitchburg Duck Mills v. Barrell*, 214 Fed. at 780, 781.

"Appellant has not discovered a new use for an old composition of matter, but he has discovered a new [modified] composition of matter adapted to a use not contemplated in any of the references." *Delaney*, 62 Fed. (2) 840.

"The prophetic suggestions in English patents of what can be done, when no one has ever tested by actual and hard experience and under the stress of competition the truth of these suggestions, or the practical difficulties in the way of their accomplishment, or even whether the suggestions are feasible, do not carry conviction of the truth of these frequent and vague statements. . . . The result [otherwise] reached is not shaken by merely a single sentence in the English patent." *Haynes Stellite Co. v. Chesterfield*, 22 Fed. (2) 638.

"There seems to be no inventive concept in this mere selection from the prior art of the two old things, the impregnated canvas and the phenolic condensation product, and using them in a single structure." *Ex parte Egerton*, 328 O. G. 780.

"The product sought was something between the crude coal and coke, and was to be obtained by stopping the process of distillation before reaching the coking stage. . . . The finished products . . . are of the same chemical species. . . . In no sense the creative work of that inventive faculty." *Musgrave v. Nye*, Commissioner of Patents, 78 O. G. 2047.

"The change made . . . in the construction of a watertight shoe were changes of degree only, and did not involve any new principle. . . . In the construction of it the vamp, the quarters and the expansible gore flap were cut somewhat differently . . . but they subserve the same purposes. . . . A mere carrying forward or more extended application of an original idea—a mere improvement in degree—is not invention." *Burt v. Evory*, 133 U. S. at 358.

A button formed from a single sheet of metal, free from sutures, of a convenient shape, and uniting strength with lightness, would seem to come fairly within the meaning of the patent laws. . . . The advantages of the new button were at once recognized by the trade and by the public. . . . Very large quantities have been sold. . . . 'Is sufficient to turn the scale in favor of the existence of invention.' " *Krementz v. S. Cottle Co.*, 148 U. S. at 559, 560, 561.

"There is nothing new in the custom of applying ointment to a cloth which is to be used as a bandage, as described in the claims. . . . The mere combination of the article disclosed in the two former patents will not constitute invention, unless it result in producing a new and useful article not applied by those familiar with the state of the art." *In re Faber*, 136 O. G. 229.

“The product which he claimed was a seamless stocking with a divided foot . . . neither of these features was new, and the mere conception that they might be associated was not patentable. . . . Invention in what he did must have resided . . . in the . . . ‘reciprocal inter-loopment of the loops of the opposed edges’; and . . . this was not new . . . it would include the ‘suture’ in . . . the prior art. . . . Decree dismissing the bill.” *Weierman v. Shaw Stocking Co.*, 157 Fed. at 929, 930.

“The fact that there are distinctions between the work of Booth and that of Bywater, and that Bywater, by a wise choice of yarn and patient work in mechanical development, produced the fabric which he did, goes a long way to meet the charge of the want of invention which is made.” *Hanifen v. Armitage*, 117 Fed. at 848.

“It cannot be conceded that a fabric with a *moiré* design thereon is patentably different from a fabric with any other design thereon. . . . In mechanical patents . . . a patentably different structure of fabric is not made by changing the design impressed thereon.” *Dreyfus*, 20 U. S. P. Q. 304.

“Any article or product is a result, and a claim is to be read in conjunction with its specification; it follows that solution of the question of invention, even as to a product, requires investigation of the means of production. . . . And although what are called ‘product patents’ are well known, their validity and scope are usually ascertained by analysis of the manner of production.” *Harmon Paper Co. v. Prager*, 287 Fed. at 843.

“That there was stamped upon the lace front stocking of the prior art a slight peculiarity of structure, due to the machine on which it was made, does not serve to characterize it or differentiate it from the lace front stocking of the prior art. It can only differentiate it by those structural marks, due to the machine upon which it is made. These are too unsubstantial and accidental to create a new article of manufacture in the sense of the



patent law, the production of which involves the exercise of invention or discovery beyond what was necessary to construct the apparatus for its manufacture or production." *Kilbourn Knitting Mach. Co. v. Liveright*, 165 Fed. at 905. See also *Scott and Williams Co. v. Aristo Hosiery Co.*, 300 F. at 625.

"The new are said to be marked with 'longitudinal straitions,' but these have nothing whatever to do with the quality or operation of the trap. . . . The only difference there can be, in reality, is that one is cast and the other is drawn. . . . These old and new traps are therefore alike, in the sense of the patent law. They are of the same material, and accomplish the same result in the same way. . . . However meritorious an invention of the means for making a drawn trap might be, this patent . . . is for the product only." *McKloskey v. DuBois*, 8 Fed. at 712.

"It may be more or less useful than other gloves. . . . If it is a useful article, and is new, it is the proper subject of a patent, provided it involved invention to produce it." *Lamb Knit Goods Co. v. Lamb Glove and Mitten Co.*, 120 Fed. at 272.

"We are dealing with a comparatively new and abstruse art, where the most important results are said to follow from changes, apparently, of the most unimportant character. . . . The substitution of one material for another in a door-knob is the work of the mechanic, the substitution of one material for another in secondary battery electrodes may solve a problem which will revolutionize the motive power of the world." *Electrical Accumulator Co. v. New York and H. R. Co.*, 50 Fed. at 82. Followed in *Accumulator Co. v. Edison Electric Illuminating Co.*, 63 Fed. at 980.

"It may be that . . . the process itself, produces more evenly crushed or cut granules of coffee than other machines or processes. The coffee may look better or more attractive in the package, but this does not involve inven-

tion.” *Baker v. F. A. Duncombe Mfg. Co.*, 146 Fed. at 748.

“This method of treating plug tobacco would suggest to every one the compression into a bale, of distinct packages of plasterers’ hair, and leaves no field for invention.” *King v. Gallun, et al.*, 109 U. S. at 102.

“While appellant has developed a new process for making a printing cylinder, has not produced a new product patentably distinct from the old.” *Brawn*, 25 U. S. P. Q. 359.

“No such paper existed in the prior art, which could thus be crumpled so as to represent seviated or jagged miniature mountains and produce the same scenic effects. This was not the new use of an old product, but was the creation of a new product. . . . The new product creates or makes possible a new use.” *Maurer v. van Seiver*, 84 Fed. (2) 186.

“It is said that from time immemorial eye shades have been made by cutting visors from paper and tying them on with strings. If this was a matter of common knowledge, so much the more marked was the intuitive flash that finally came to Mahony’s mind, and to his alone. We think there was invention of the ‘happy thought’ kind. . . . As we said in *Regent Mfg. Co. v. Penn Electrical Co.*, 121 Fed. at 80; . . . ‘The device seems exceedingly simple; but its very simplicity, in such an old field, should be a warning against a too ready acceptance of the ex post facto wisdom of the bystander.’ ” *Mahony v. Malcom*, 143 Fed. at 125, 126.

“The predecessors of Edison invented apparatus, during a period of transition from plates to flexible paper film, and from paper film to celluloid film, which was capable of producing negatives suitable for reproduction in exhibiting machines. . . . Mr. Edison, by utilizing this film and perfecting the first apparatus for using it, met all the conditions necessary for the commercial success. . . . By the terms of the claim the length of the film is

not defined. . . . It is to be unbroken transparent or translucent, tapelike photographic film; it is to have thereon equidistant photographs of successive positions of an object in motion . . . arranged in a continuous, straight line sequence; and the number of them is not limited. . . . The film was not new, and if the other characteristics of the product are not new . . . the claim is destitute of patentable novelty." *Edison v. American Mutoscope Co.*, 114 Fed. at 934, 935.

"Goebel . . . made these lamps, . . . but . . . they do not anticipate the invention of Edison. At most they were experimental toys, . . . their life was brief. They could not be used for domestic purposes. They were in no proper sense the practical commercial lamp of Edison. . . . Work ceased on these lamps in the 'fifties,' and was not revived until Edison, 20 years later, startled the electric world with his invention." *Edison Electric Light Co. v. Beacon Vacuum P. and E. Co.*, 54 Fed. at 690, 691.

"There is something new here, in that no one had produced filter layers of moist pulp which were made outside the filter. . . . If a patented product is new, and goes into extensive use without being unduly pushed, it should rarely be held unpatentable. . . . In the absence of this condition of things . . . these claims should be held invalid." *Karl Kiefer Mach. Co. v. Unionwerke, A. G.*, 218 Fed. at 859.

"The basis of Potter's invention . . . is pulverized slate . . . in combination with coal-tar, oil, or other cementitious material. . . . It may, in a cold state, be applied . . . and hardens by exposure to air and heat. Straub boils coal-tar until he makes artificial asphaltum. . . . Straub's mixture is applied while the compound is hot; it hardens by mere loss of heat. . . . Potter is fairly to be considered . . . inventor." *Plastic Slate-Roofing J-S Co. v. Moore*, 1 Holmes, 167.

"This product, as a new and useful article of manufacture, the inventor is entitled to patent and protect. . . .

His invention may be spoken of as a glazed-filled multi-part porcelain insulator. . . . It is no doubt true that an inventor who devises a new process cannot patent the product, simply because it is a result of that process, if it is not itself also new. . . . There is nothing to bar the patenting of the product, as well as the process, if both are new." *R. Thomas & Sons Co. v. Electric Porcelain & Mfg. Co.*, 111 Fed. at 931.

"To hold that there is any suggestion in Kling's patent of what Koehler did, or that 'the applicability of steel wool to the new use' Koehler made of it would occur to any person of ordinary skill in the art seems to us unwarranted. The filtering of inorganic dust from combustible gases is a very different problem than the consuming of greasy soot carried by kitchen oven vapors." *Akme Flue, Inc. v. Aluminite Flexible Flue Cap Co., Inc.*, 27 Fed. (2) 736.

"Relatively short lengths of spun fibrous material in string-like form as a reinforcing filler for a plastic composition in place of Tulley's long fibres . . . or . . . long pieces of string, involved 'a mere carrying forward' . . . merely a change in degree." *Economy Fuse and Mfg. Co. v. Coe*, 474 O. G., 699.

"The idea of this curled wire yarn—so to term it—originated . . . with Gottschalk; and . . . there was no prior art of making it. The learned District Judge regarded this material as a mere modification of the previously wire-wound yarn. We are unable to agree." *John W. Gottschalk Mfg. Co. v. Springfield Wire and Tinsel Co.*, 24 U. S. P. Q. 131.

"Claim 37 covers, as a product, a form for depositing dispersed materials from a rubber dispersion, which comprises an impervious base and a film containing a coagulant salt therein . . . allowable." *Twiss*, 24 U. S. P. Q. 114, 115.

"Emulsions made with bentonite . . . have enabled emulsions . . . to be utilized for new purposes. . . .

There is no disclosure in the prior art of any of the advantages." *Patent and Licensing Corp. v. Bitutect, Inc.*, 21 U. S. P. Q. 143.

"Warren's invention, . . . consists in the discovery that an aggregate of large and small pieces of stone, together with a certain proportion of stone dust, all mixed together and thoroughly permeated with bitumen or asphalt, results, when set, in a compact, stable structure. . . . The larger pieces of stone withstand the tendency of the small grains or dust to slip. . . . The result is therefore a stability. . . . Though the analogy between street pavement and sidewalk pavement is close, there are material differences. . . . In one, the wear and strain . . . of pedestrians. In the other, . . . the steel-shod feet of horses and the grinding pressure of vehicular traffic. . . . We are the more indisposed to treat this piece of experimental sidewalk as an anticipation." *Warren Bros. Co. v. City of Owosso*, 166 Fed. at 312, 313, 317, 318.

"In the Gately packing the parts are kept together and in place solely by reason of the fact that the rubber has been subjected to vulcanization, thus making the packing a homogeneous whole. . . . As to the other . . . they all show something which Gately dispensed with, that is, an elastic core and a wrapping of fibrous or textile material." *Magowan v. New York Belting & Packing Co.*, 141 U. S. at 342.

"'I . . . claim . . . plaster of Paris, or gypsum . . . in the construction of all iron chests, or safes.' . . . It is not for the discovery of the fact or principle that the gypsum has certain qualities . . . but it is for . . . a manufacture. . . . If you should find that Conner discovered this . . . but that the safe itself had disappeared . . . his patent might stand." *Rich v. Lippincott*, 2 Fish. 1.

"In view of the proportions given in the claim of montan wax to fiber being different from that specified in the



art and of the further fact that appellants claim a board alleged to have different characteristics than those defined in the art of record, we feel constrained to hold the claim on appeal patentable." Landt, 13 U. S. P. Q. 266.

"The leak-stopping composition put into the radiator. . . . The art of stopping leaks in tires is not analogous to that. . . . Soap acts as an agent for suspending the aluminum and flaxseed meal . . . coacts with the oil of the flaxseed meal in carrying the aluminum to the leak . . . to form an aluminum hydroxide which in turn transforms the free soap which is soluble, into insoluble soap." Radiator Specialty Co. v. Buhot, 4 U. S. P. Q. 207, 208.

"There is nothing of record to even remotely suggest the prior use of laminated ribbon of submucous animal intestinal tissue for surgical tape. . . . Why, then, should it be held that appellant is not entitled to a patent." Rogers, 32 U. S. P. Q. 258.

"The substitution of a celluloid top insulated the salt from the humidity of the external air . . . keeping the salt dry. . . . The fact that a celluloid cap had been previously used on a talcum-powder bottle, far from being an anticipation. . . . Talcum powder is a dry, chalky substance which neither caked nor became damp." Westmoreland Specialty Co. v. Hogan, 167 Fed. at 328.

"We find in the record no prior patent or publication which states that one 'may determine the proper length of the primary coil by connecting the transformer in circuit with the dynamo with which it is to be used, and then winding on wire until the loss indicated by the formula  $C^2R$ , with the secondary circuit open, equals a certain loss of energy.' " Westinghouse Elec. & Mfg. Co. v. Saranac Lake El. L. Co., 113 Fed. at 889.

"It was the injecting and squirting process devised by Schaub which made possible . . . for thereby the gelatinized framework was generally dispensed throughout the mixture, as were also the cavities containing the combustible liquid. . . . This simple expedient was the last

step which converted a possibility into a practical success, and comprised a patentable invention." *Therorz Co. v. United States Ind. Chem. Co.*, 14 Fed. (2) 636.

"The prior art spectral tubes tested in this suit were those at the Bureau of Standards, and they were impure. It was not established that any prior art tube would inevitably purify itself by aging. The tubes of the prior art were only run through seconds, or at short intervals of time, and did not run continuously, and to interpret previously purified neon as including neon purified by aging does not deprive the public of any rights to use the prior art tubes which it possessed when this invention was made. For such use, tubes were used, but they did not purify. The public can continue to use the tubes of the prior art without the charge of infringement. Nobody, before this inventor, purified a spectral tube, at least one used for lighting purposes after the final charge of gas had been introduced into the tube." *Claude Neon Lights v. E. Machlett & Son*, 27 Fed. (2) 704, 705.

"Invention cannot be found in providing, mixed and ready for use, a painting or similar material which is the same thing that skilled workmen had been accustomed to prepare as they used it." *Ohio Varnish Co. v. Glidden Varnish Co.*, 215 Fed. at 904.

"Appellant has discovered that he may substitute for the colloid of Wilkins ground vegetable meals which are much cheaper than the casein and also are satisfactory for stock foods. . . . We have carefully considered the compositions containing blackstrap and ground feed as disclosed in Oliver, Belton and Peterson and we must agree with appellant that the compositions of these patents are of substantially different nature from that of Wilkins. It is our opinion that none of these references would suggest the use of a ground cereal meal as a stabilizer for the dry, powdered blackstrap of Wilkins in lieu of the colloid." *MacLachlan*, 16 U. S. P. Q. 360.

“The product is in the form of a dry meal each particle of which contains both fish and milk substances. This is accomplished by comminuting the fish for solid food component into a homogeneous mass and then thoroughly mixing the milk or liquid food component therewith to form an intimate solid-liquid mixture. This mixture is then dried to produce the final product.” *Ex Parte Birdseye*, 18 U. S. P. Q. 152.

“The gist of the invention . . . is the manufacture of an imitation honey . . . admitted to be new. . . . ‘The true question is whether the combination of materials by the patentee is substantially new. . . . If they have never been combined together in the manner stated in the patent, but the combination is new, then, I take it, the invention of the combination is patentable.’” *In re Corbin*, 1 MacA. Pat. Cas. 521.

“It appears in evidence that the bark of the birch tree had been previously used as flavoring matter for a beer; that the plaintiff found he could get a stronger and better flavor at less expense by using the oil of wintergreen, the flavor of which is like that of black birch, and that he afterward substituted the oil of birch for the oil of wintergreen, with some other slight changes of ingredients and treatment. . . . Decree for the plaintiff.” *Rogers v. Ennis*, 14 O. G. 601.

“The cooked flakes of the Kellogg patent are not . . . a new product. It is at most a step in advance upon products well-known in trade and to the breakfast table.” *Sanitas Nut Food Co. v. Voigt*, 139 Fed. at 556.

“Complainants’ product, . . . commercially speaking, . . . may be a new article of manufacture, but it is, after all, only an improved preparation of Indian corn, with the same characteristics and qualities as other similar preparations. It may be less liable to spoil, more porous, more easily soluble . . . but . . . they are only the same qualities in an improved degree.” *Maryland Hominy and C. Co. of B. C. v. Dorr*, 46 Fed. at 776.

"The Gent product may be brighter in color, more desirable in commerce, and more useful, than its predecessors, but is composed of no ingredients previously unknown, and is the result of no essentially new combination of old ingredients; nor is it, so far as we can see, the result of any new mechanical or chemical process. At most, it is an advance only upon the old art in the direction of perfection—a step merely in the mechanical evolution of cereal foods and general flour making." *Cerealine Mfg. Co. v. Bates*, 101 Fed. at 281.

"The new composition . . . consists of a mechanical mixture of kaolin and shellac. . . . A number of patents were exhibited. . . . In some of them kaolin is specifically mentioned . . . in connection with shellac. . . . In others, 'all earths, dried and powdered,' 'finely powdered porcelain,' . . . and like descriptions of inert materials. . . . It was no more invention to substitute kaolin for any of these, than to make door-knobs of clay or porcelain, instead of iron. . . . The proportions mentioned in the patent do not yield the best result. . . . Bill . . . dismissed." *Welling v. Crane*, 21 Fed. at 708, 709.

"The testimony . . . that in a few instances plaster of Paris had been used, . . . to fill such small cavities or cracks as were occasionally found in the cob, is also insufficient to establish the plea of anticipation. . . . It is not pretended that plaster was so applied to the whole exterior surface of the bowl, with a view of improving the quality of pipes." *H. Tibbe & Sons Mfg. Co. v. Lamparter*, 51 Fed. at 764.

"A product which, after exposure to the air for more than a year, could be distorted by hand, was readily soluble in benzol, and when exposed to the flame of an alcohol lamp gave off visible vapors in 5 seconds, ignited in 30 seconds, and crumbled in 45 seconds . . . was valueless as an insulating material. . . . Product claims are not sustainable." *Hemming Mfg. Co. v. Cutler-Hammer Mfg. Co.*, 243 Fed. at 599, 600.

## II. Of Laminated Structures

“In the use of sheets of perforated lead as a flooring and as a filtering medium in a barrel filter there was on the part of Sloan neither discovery nor such ingenuity of adaptation as entitled him to a patent. . . . The perforated sheets of lead performed in the same way the precise function theretofore performed by the lead-covered steel sheets, and by the perforated hardwood boards, either with or without the superimposed lead sheets; and as a filtering medium their precise function was heretofore performed by asbestos cloth, slotted sheet lead, and woven lead in combination with asbestos.” *Sloan Filter Co. v. Portland Gold Min. Co.*, 139 Fed. at 27.

“Two later patents . . . are both dependent upon the use of sand or similar material upon the asphalt paint . . . appellees contended that the application of sand upon the asphalt paint resulted in ridges being formed, which in turn acted as a check to the flow of the water over the roof, and thus prevented the snow and ice from carrying off the grit. The testimony . . . supports the conclusion here reached that these so-called dams or ridges were barren of practical value. . . . The application of sand upon paint to prevent its spreading is not patentable invention.” *West Coast R. and Mfg. Co. v. Elaborated Ready Roof. Co.*, 249 Fed. at 226.

“We thus have a patent for a wood heel for shoes and unquestioned proof that heels fulfilling the requirements of the patent claims were made by a manufacturer prior. . . . We cannot escape the conclusion that they were made in such form by design and not by accident . . . negative novelty and defeat invention.” *Vulcan Corp. v. United Shoe Machinery Corp.*, 29 U. S. P. Q. 71, 72.

“This application relates to a gelatin coating for meat products in which the gelatin is protected on both sides by coatings of other materials so that moisture from the meat or from the air will not injuriously affect the gelatin.



Gelatin coatings for meat are well known . . . but none of the references disclose the two protective coatings. . . . The fact that a varnish had been applied over a bituminous coating . . . we do not regard as teaching." Walter, 32 U. S. P. Q. 616.

"Appellant is claiming a food product consisting of a plain ribbon of edible material and a folded or corrugated ribbon of similar material rolled together. . . . The bottle wrapper references would not suggest forming the edible material of the food references. . . . Neither is it apparent why anyone should wish to form bottle wrappers of edible material." Perky, 2 U. S. P. Q. 84, 85.

"A thickness of the paraffin layer within a range of .00003 to .00017 is a critical one . . . is patentable." Sprague, 27 U. S. U. Q. 49.

"Appellant's product is composed of flat pieces of cork laid in a mold parallel to each other, and then subjected to tamping and pressing operations under heat of such a degree that the natural resins of the cork exude and form a binder. . . . None of the references show a material such as he has produced." Grupe, 9 U. S. P. Q. 256.

"The simple question is whether there was any invention in coating the body of a sheet of [fly] paper with an adhesive composition, and surrounding it with a border of less adhesive material. . . . The use of two substances, the one slightly adhesive, and the other readily adhesive, upon the same sheet of leather or paper, was common long before the date of the patent. . . . All the patentee did was to reverse the order. . . . Such a rearrangement required no invention, but would suggest itself to any one skilled in the art. It is not sufficient that the patentee may have produced a better and more merchantable article, but there must have been something novel in the means which were employed in its production." *Andrews v. Thum*, 67 Fed. at 912, 913.

"It is impossible to believe that it required ingenuity worthy of the name of invention to take the step of using

upon the 'spot' the same adhesive used upon the 'overall' coating. . . . Rather the problem as the history of the development of the industry shows, was to perfect a machine that would operate with sufficient accuracy and speed to render manufacture commercially successful." *Crown Cork & Seal Co., Inc., v. Ferdinand, Gutmann & Co.*, 86 F. 2nd, 700.

"It is not pretended that a film other than one having a paper support coated with sensitized gelatin, was used prior to Goodwin's invention. . . . The proposition that these paper films were used because they were inexpensive and thus available for trying out the film roll system is not persuasive." *Goodwin Film and Camera Co. v. Eastman Kodak Co.*, 213 Fed. at 234, 235.

"He discovered, after a long search and many experiments, that the paper known as 'Japanese dental paper,' or 'yoshino,' was so very porous that its fibres need not at all be cut or destroyed . . . in the manufacture of stencils. . . . Not only did Broderick's invention introduce the porosity of the paper, . . . but as well for the first time made use of a soft wax for the necessary coating, and this was quite as important as it was novel. . . . Even the defendant admits that . . . a hard wax is not only unsuitable, but unusable; hence there can be no question of degree raised, for the harder wax cannot be a factor in the problem solved." *A. B. Dick Co. v. Fuerth*, 57 Fed. at 838, 839.

"The paper was not new, nor the waxing, but the waxing for such purpose might . . . be entirely new. . . . The evidence of the defendant shows . . . he had . . . waxed most kinds of paper with paraffine for various purposes. . . . But it falls short of showing . . . that he had actually ever waxed this kind of paper, and far short of so showing that he had ever made such blanks as these for stencils." *A. B. Dick Co. v. Wichelman*, 74 Fed. at 801, 802.

"He appears to have been the first to make a plaster board that could be successfully used as a substitute for lath and plaster. . . . Patent is valid." *Sackett Plaster Board Co. v. Rutkowsky*, 167 Fed. at 141, 142.

"Appellant has found that the addition of asbestos fibres to tire cords produces a substantial improvement in tires and the Examiner has cited art showing that it is old to mix asbestos with cotton fibres to form cords. The Examiner states the limitation that the cord is a tire cord is held to have no patentable significance. Appellant, of course, could have claimed his improvement as a tire containing cords of the type specified, but in that case, anyone could manufacture cords and ship them to the tire manufacturer without directly infringing the claims. We are of the opinion that the term 'tire' in the claims should be construed as a limitation and we are also of the view that it was not obvious that tire cords containing a mixture of cotton and asbestos fibres would be an improvement over the all cotton cords." *Yaxley*, 33 U. S. P. Q. 57.

"The article . . . is a terra-cotta pipe . . . divided . . . into six compartments or ducts. . . . The several . . . hollow blocks of terra-cotta which were produced on the hearing . . . have all of the essential and characteristic features of the alleged new terra-cotta wire conduit pipe. . . . The patentee was not entitled to a patent merely because he suggested the idea of devoting it to a new use." *Browning v. Colorado Telephone Co.*, 61 Fed. at 846, 847.

"Rigid tiles with the interlocking device had been in use before this patent was applied for. At that time, also, patentees in various patents had pointed out the advantages arising from substituting in tiles rubber and other elastic compounds in place of the nonyielding materials. The ordinary incident of elastic compounds is the capacity for expansion and compression. Employing this material . . . involved no essentially novel use."

New York Belting and Packing Co. v. Sierer, 158 Fed. at 823.

“The application of a material that was never before used in making chairs did not require the exercise of the inventive faculty. He may have been the first person to see the adaptability of vulcanized fibre to this purpose . . . but . . . vulcanized fibre had been employed as a substitute for wood and for leather. . . . In Hotchkiss v. Greenwood, 11 How. 248, the court decided that the substitution of porcelain for metal in making door-knobs of a particular construction was not patentable, though . . . made a better and cheaper knob.” *Vulcanized Fiber Co. v. Taylor*, 49 Fed. at 745, 746.

“It is true none of the references show the use of a composition strip of this kind for fastening the flashing of a roof, but it would seem to be obvious to one skilled in the art to use such a composition strip when its adaptability for such use in holding nails was well-known to the prior art.” *Stagg*, 9 U. S. P. Q. 185.

“Claims . . . all relate to a method or a package which calls for a separate gaseous envelope or gaseous atmosphere around the small cuts of cheese. Stevenson taught the presence of an inert gas such as carbon dioxide or nitrogen. . . . The . . . claims are so broad as to read upon Stevenson . . . Claims 18, 19 and 20, however, call for the presence of atmospheric air inside the package . . . said claims 18, 19, and 20 possess inventive novelty.” *Doane*, 25 U. S. P. Q. 401.

“While others had indicated that rotation in ropes might be reduced or eliminated by winding layers in reverse directions, Whyte was the first to suggest a definite ratio of the lays and thus secured a patent.” *Macomber and Whyte Rope Co. v. American Steel and W. Co.*, 276 Fed. at 287.

“The substitution of paper for vulcanized fibre cannot be regarded as a patentable invention even if, by reason of the greater compressibility of paper, the lining [of the

electric insulating sleeve] can be made somewhat larger and more closely fitting than the fibre lining." *Marshall v. Pettingell-Andrews Co.*, 153 Fed. at 581, 582.

"'21. A food container comprising an edible hull of preserved natural fruit . . .' All the claims require that after the hulls shall have been filled, the several portions shall be sealed. . . . Appellant's claims are for a food container which, it is evident from the record, is a new and we think a novel article." *McIlvaine*, 25 U. S. P. Q. 437.

"Although the patentee's material closely represents what had been before known in the arts, yet under the circumstances the new adaptation as a gasket, or for steam packing, sustains the prima facie evidence of invention which arises from the issue of the patent. . . . Potts' invention covered a flexible weighted protector for steps, 'with narrow strips of thin sheet lead, . . . moulded into the edges.' . . . Therefore, even if the complainant's material, as described in his specification and claim, would have been anticipated if used before him for matting, Pott's did not strictly anticipate because he did not use it for the matting itself, as a part of the body thereof." *Forsyth v. Garlock*, 142 Fed. at 462, 466.

"In the prior art it was common to cut or make letters, ornamental designs, or borders on the ground side of a plate of glass and silver its rear side. . . . Until Rembusch disclosed the use of a ground front mirror as a screen, the grinding of the whole front of a mirror would have unfitted it for any use then known. . . . We are clear the device embodies invention in the true sense." *Rembusch v. Bennethum*, 214 Fed. at 258, 259.

"Nested tapered paper cups were old. . . . The real problem was, not the form nor the material of the cup, but the mechanism with which to manufacture it . . . was one of manufacture of the cup, rather than of the cup itself, in relation to the dispensing apparatus." In-



dividual Drinking Cup Co. v. Public Service Cup Co., 250 Fed. at 622.

“The claims . . . relate to a wick with a core or with a strand or strands of cellulose derivative . . . give to the wick the necessary stiffness. . . . The British patent . . . proposed to provide a wick with impregnation at that portion which protrudes. . . . The patent does not teach that any stiffening may be expected . . . nor is it all clear that the thread used is of sufficient size to produce such an effect. . . . It may involve invention of the highest order.” Atkins, 23 U. S. P. Q. 91.

“As the new ball has within itself, so to speak, some 20 or 25 yards of distance not possessed by the old ball with respect to the driving stroke, it is substantially different in kind from the old ball. . . . No one of these inventors hit upon the successful means . . . disclosed in the patent in suit. . . . The claims, we find them valid.” Sporting Goods Sales Co. v. Haskell Golf Ball Co., 217 Fed. at 409, 410, 411.

“The use by the patentee of the wire so covered, to conduct electricity . . . was an entirely new use, the result of a discovery that gutta-percha was an electrical non-conductor, evolved by original thought, totally different from its quality previously known and applied, as a mere mechanical protector from external injuries.” Busell Trimmer Co. v. Stevens, 137 U. S. at 434, interpreting Colgate v. Western Union Tel. Co., 15 Blatchf. 65.

“The patented method requires the sleepers to be fastened to the brackets and the brackets to the temporary flooring, before laying of concrete is commenced; and only one layer of concrete . . . is required. . . . If it shall appear that through a new combination a novel and useful result is achieved, the court is not to be misled by the apparent simplicity of the device, nor by the fact that the elements involved are old. . . . Admittedly the combination . . . is new. . . . The patent must on demurrer be treated as entitled to the rank of inven-

tion." *Ferro Concrete Const. Co. v. Concrete Steel Co.*, 206 Fed. at 668, 669.

"The patented improvement consists in having one of the two opposing members of the union formed with a concave abutting face, and the other with a convex abutting face, one of these meeting faces being composed of soft metal. . . . The improvement effectively overcomes difficulties, . . . the patent in suit covers a union patentably new." *Devlin v. Paynter*, 64 Fed. at 399.

"The Woodward patent . . . 'improvement in compositions of matter.' . . . The articles described to be made under these several patents were all articles so entirely different in construction, form and proportions of material from the flying targets as to make it plain that the patentees in those cases never contemplated that their compounds could be varied or should be varied, to make the peculiar structure required for the flying targets under the complainants' patent sued on. . . . The compound described in said patent has in fact been so successfully used in the manufacture of flying targets that now some 12,000,000 are made annually. . . . A novel and useful invention." *Cleveland Target Co. v. United States Pigeon Co.*, 52 Fed. at 386, 387.

"Balls composed of rubber thread or strips, wound under tension . . . were old and well known. . . . Balls having covers composed . . . of gutta-percha were also old and well known. . . . But none . . . used or intended for use in the game of golf. . . . The patentees' core and shell in combination . . . produce a new . . . operation." *Haskell Golf Ball Co. v. Sporting Goods Sales Co.*, 210 Fed. at 627, 628.

"The patent relates to base ball masks. . . . Prior to Johnstone the masks were always made of interlaced wires. . . . While the White patents each disclose a mask with a relatively stiff frame . . . yet . . . the Johnstone mask involves . . . substantial structural differences. . . . Johnstone's mask is unsuited for a boxing mask. . . .

Infringement clear." *P. Goldsmith Co. v. Johnstone*, 294 Fed. at 757, 759, 760, 761.

"Strengthening the open handle socket . . . and . . . strengthen the shovel blade . . . by the simple process of carrying further and broadening out the upper ends of the shovel blade corrugations, and . . . broadened the upper end of the shovel blade corrugation, and carried such . . . into . . . broader corrugations which formed the open handle socket. . . . With that lighter shovel . . . an increased strength. . . . Patent in suit is valid." *Surbaugh v. Hubbard & Co.*, 282 Fed. at 949, 950.

"The patentees, who were employees of the plaintiff, took a startling step, one that flew in the face of universal practice slavishly followed in the whole floor covering art, and in taking that step utilized the ragged edges, which had condemned molded linoleum in the eyes of the public, into an element of favor which led the rejected molded linoleum to outsell by leaps and bounds the straight-line product, and opened new fields of use for linoleum to which it had never aspired. This remarkable result was effected by the very simple thing of abandoning the time-followed practice of even-surfaced linoleum, by indenting the juncture which formed the objectionable ragged edges. Indenting leather was an art as old as bookbinding, and, indeed, the indenting for wall coverings of *Lincrusta Walton*, which was but another type of linoleum, had been practiced for 30-odd years. But, in spite of these practices and uses being well known, it is strange no one had even thought of indenting linoleum, and herein lies the inventive thought; for, when once thought of, the doing of it physically was but the indenting of a hitherto plane surface floor covering." *Armstrong Cork Co. v. W. & J. Sloane Mfg. Co.*, 27 Fed. (2) 646.

"He had discovered that his continuous lining composed of cementitious material applied in a plastic state, when hardened, would stand against the hot sulphite

liquor; that it adhered to and protected the iron from the corroding influences of the acids; that its cohesive, expanding, and resilient qualities would withstand the strains resulting from the expansion and contraction of the iron shell under the protective conditions incident to the thick homogeneous wall or lining, when subjected to the degree of heat and pressure necessarily employed in the sulphite process. . . . He was an inventor . . . in a broad sense. . . . We look at this as an invention of an improved structure.” *American Sulphite Pulp Co. v. Howland Falls Pulp Co.*, 80 Fed. at 400, 401.

“In view of the fact that previous attempts . . . to make a practical canvas belt had been failures, and that Gandy had been experimenting with the subject for several years before he discovered that a change was necessary in the structure of the canvas itself, we do not think his improvement is a change in degree only, or such an one as would have occurred to an ordinary mechanic.” *Gandy v. Main Belting Co.*, 143 U. S. at 594.

“As the plaintiff invented the proper mode of enameling the proper quality of the paper to enable a turned-down or folded collar to be made wholly of paper without any danger of crumbling or breaking the enamel by the operation of folding, the claim for a collar made from such enameled paper as a new article of manufacture, consisting of a turn-down or folded enamel paper collar . . . is valid.” *Hoffman v. Stieffel*, 3 Fish. 638.

“He produced a new thing—a silver-plated steel spoon which was cheap, durable, beautiful, and useful. Having . . . accomplished what other men tried to do and wanted to do . . . the various claims of the product patent are found . . . to be valid.” *Wallace v. Noyes*, 13 Fed. at 180.

“The efforts of inventors had long been ineffectually directed to find an elastic fabric which should make a water proof collar having continuously the appearance of freshly starched linen . . . and be capable of continu-

ous, prolonged and pleasant use. . . . It was not simply to make a suitably thin sheet of celluloid . . . and no existing knowledge declared or pointed out that its combination with an interlining would make a fabric which . . . would not be a failure." *Celluloid Mfg. Co. v. American Zylonite Co.*, 35 Fed. at 420; see also *Celluloid Mfg. Co. v. Chrolithion C. and C. Co.*, 23 Fed. 397.

"A patent cannot be taken out for an article, old in purpose and shape and mode of use, when made for the first time out of an existing material, and with accompaniments before applied to such an article, merely because the idea has occurred that it would be a good thing to make the article out of that particular old material." *Gardner v. Herz*, 118 U. S. at 192.

"The specification . . . very clearly explains . . . producing internally-graduated hollow glass-ware. . . . Timmons' patent shows a cup . . . 'the graduation being in the interior if the cup be of metal.' . . . He does not expressly state how the interior graduations are to be made . . . or . . . suggest internal graduations upon glass-ware, or any method of producing the same. . . . Hobbs' . . . improvement is both new and useful." *Hobbs v. King*, 8 Fed. at 92, 93.

### III. In Metal Working

"All of the method or process claims were allowed. . . . The Board found that the prior art did not describe such an article as is here claimed, but the ground of rejection was . . . it being shown that a cold rolled surface finish in iron-chromium is old, and that ductile iron chromium alloy is old, and it being further shown that cold rolling carbon steel and then annealing it was old, there could be no invention involved in a product of ductile iron-chromium alloy with a cold rolled surface. . . . Appellant . . . set out that the method shown by Browne for treating steel sheets could not be applied to an iron-chromium



alloy with a resulting product such as is claimed by appellant. . . . Appellant has produced a new and useful article . . . nor did such prior art show or suggest any method by which it could be produced. . . . All . . . claims should be allowed." George, 20 U. S. P. Q. 221, 222, 223, 220.

"The appellant contends that although the prior art may have used metals for a protective coating similar to those disclosed in his application, the art . . . did not discriminate between such materials and copper, for instance, and that the appellant has been the first to discover the real cause for the desirability of using materials for a protective coating. . . . However, Dake and Corbit both disclose that the protective metal should be of the same color as the reflective surface. . . . An applicant is not entitled to a patent for the discovery of the scientific explanation of the successful operation of a device, or process, theretofore invented by another." Langdon, 25 U. S. P. Q. 418.

"General Electric Co. v. DeForest Radio Co., 28 Fed. (2) 641, held that the product claims of the Coolidge patent were invalid in that the tungsten and tungsten wire claimed were products of nature. . . . Ductility was a natural characteristic of substantially pure tungsten." General Electric Co. v. Anraku, 25 U. S. P. Q. 314.

"The theory of Pacz was directly contrary to the prior teachings. . . . No one knows even at the present time just why the Pacz process should make grains of such size that the filament will not . . . produce offsetting. . . . This made a new structure. It is patentable as a product quite apart from the process." General Electric v. Wabash Appliance Corp., 32 U. S. P. Q. 186.

"Sagging was a definite problem in the art up to the advent of the Pacz filament. . . . The tests showed a marked change in the sagging problem of the Pacz filament as against the sagging of other filaments prior to the Pacz patent. Pacz accomplished by his invention

something different in principle and in kind from the prior art and did so in the face of the contrary teaching contained in the Coolidge patent. . . . A decree for injunction." *General Electric Co. v. Wabash Appliance Co.*, 32 U. S. P. Q. 187.

"The patent to Tellander taught that hollow articles might be cast in metallic molds having a metallic core so that their surfaces would be smooth and hard. . . . In the production of manhole frames and covers . . . it seems simple to combine the references of record. . . . The patent to Tellander was issued in 1881. . . . It seems strange . . . that those skilled in the art should, for many years, resort to the expensive operation of machining . . . if appellant's claimed processes and product were obvious to them. . . . Appellant's process . . . and his product . . . were . . . patentable." *Merriman*, 24 U. S. P. Q. 293, 294.

"The claim calls for an ingot in which the crystalline structure will remain arranged. . . . The Examiner has allowed a claim on appellant's method . . . and as the product is apparently novel and taken as a whole, has advantages not present in the references . . . it is proper to allow a claim on it also." *Carnegie*, 23 U. S. P. Q. 125.

"This testimony reveals that Mr. Smith, a representative of Johnston, demonstrated to him several small pieces of tubing manufactured by the Johnston process without, however, disclosing the process. These demonstrations were made preliminary to the execution of a contract with Mr. Simmons in which he was given exclusive right to use these inventions in the manufacture of bedsteads and allied articles. The process was disclosed to Mr. Simmons in the contract which bound him to secrecy. The showing of these pieces of tube to Mr. Simmons and the demonstration of their fitness for his use without disclosing the process did not amount to public use." *National Tube Co. v. Steel & Tubes, Inc.*, 33 U. S. P. Q. 408.

“The inventors, who pointed out the desired product and showed two ways in which to produce it, failed to appreciate that there was still another way in which the same result might be attained. The fact that later some one found another and better way to manufacture the product does not, in this case, affect the validity of the patent, which originally disclosed the product and at the same time described operative means for obtaining it.” *General Electric Co. v. Laco-Philips Co.*, 233 Fed. at 107.

“We assume that Adams had invented a new and valuable process . . . by which he produced a much larger percentage of sound copper tubes than it had been possible to produce before. But he took his patent for the product . . . cast copper cylinders free from blow holes. . . . The plaintiff admits . . . that in experimenting with the mode of casting known before Adams’s invention, it had produced perfect tubes . . . produced by a method which was followed for the purpose of producing them. The difference . . . is . . . inadequate to justify a patent for the product.” *American Tube Wks. v. Bridge-water Iron Co.*, 132 Fed. at 17, 18.

“The thing found to be patentable—‘a utensil for chemical use.’ . . . Electrodes are neither ‘chemical ware’ nor ‘chemical utensils.’” *Overmire v. Fahrenwald*, 277 Fed. at 619.

“If complainant had been the first to substitute sheet metal for cast iron or wood, and as a consequence had made a box which was cheaper and more durable . . . he would not on that account alone be entitled to maintain the patent. . . . When a new method of manufacture is involved in the use of the new material, invention should be held to exist if the new method of manufacture involved in the use of the new material would not occur to the ordinary mechanic. And such is undoubtedly the law. . . . We do not share his opinion that an ordinary mechanic could not have worked out the result.” *Columbia Metal Box Co. v. Halper*, 220 Fed. at 916, 917.

“It cannot be seriously pretended that because a lug made of a malleable metal will fit more closely to the side of a boiler than a rigid nonmalleable cast iron support that we have a new function. . . . To sustain a patent based upon a change of material, it must be shown that some new and useful result has been accomplished. . . . The case of *Union Hardware Co. v. Selchow, et al.*, 112 Fed. 1006, and *George Frost Co. v. Cohn*, 112 Fed. at 1009, . . . afford illustrations of the difference between a mere improvement resulting from a change of material and the accomplishment of a new and useful result as a consequence of such substitution. ‘Both,’ said Judge Coxe, ‘involve a change of material in existing structures; but in the one instance the skate operates after the change precisely as it did before, and in the other a hose supporter which does not support is converted by the change into a hose supporter which does support. In the former case, by the use of cheaper, lighter, and stronger metal, the skate is made cheaper, lighter, and stronger; in the other, the substitution of a rubber button for a metal button transformed a destructive and inoperative device into a highly successful one.’ *Drake Castle Pressed Steel Lug Co. v. Brownell and Co.*, 123 Fed. at 88.

#### IV. Of Alloys

“In a case of this kind, patentable novelty may reside either in the combination of the elements themselves that constitute the alloy, or in the proportions in which the different elements are combined, or in both. But since metallurgy—used in the broader sense as including not only the production of the raw material but its refinement as well—is not an exact science, we must recognize that any use of a given patent formula within the specified range of each element will not necessarily produce the alloy contemplated by the patent, which, in legal contem-



plation, is in fact produced only when one skilled in the art follows the given formula with full regard to the correlation of its several elements in their designated proportions. That is to say, one may pursue the formula, and yet not actually obtain the distinctive product called for by the formula. If so, he does not infringe. By the same reasoning, a given patent formula is not to be treated, in legal contemplation, as having been anticipated if the alleged anticipating product was not in fact recognized by those producing it, as embracing the distinctive characteristics called for by the formula, but was produced accidentally without value or profit to the art." *American Stainless Steel Co. v. Rustless Iron Corporation of America*, 17 U. S. P. Q. 26.

"Steel of a polished luster, secured by its composition against the commoner forms of acid or corrosive attack, was something sought for, suspected as possible to come from chromium admixtures, but never obtained until . . . produced as a new article of manufacture a wholly novel product, and something almost in denial of previous scientific disclosure, 'stainless steel.' To such an inventive concept the often misleading word 'pioneer' may fairly be applied." *American Stainless Steel Co. v. Ludlum Steel Co.*, 290 Fed. at 106.

"The thing which the patentees claim to have invented is an alloy . . . neither cast iron nor steel though possessing characteristics of both. . . . The striking thing . . . is its carbon content, both as to quantity and form. . . . Aside from the chemistry of its composition, Adamite has characteristics . . . which distinguish it scientifically and commercially from other metals. . . . Made into rolls it does from two to four times the work of other rolls. . . . If the thing is otherwise a patentable invention it does not fail for lack of a definite point at which the conception appeared." *Pittsburgh Iron and S. Fdry. Co. v. Seaman-Sleeth Co.*, 248 Fed. at 706, 707, 708.



“By the addition of a much larger amount of tin appellant was able to produce a brazing material which melted at a much lower temperature than that taught by Miller. This appears to have been an unexpected result when compared with the statements in the Miller patent.” Smith, 33 U. S. P. Q. 55.

“The invention in issue is a metallic composition or alloy which is used as a clean-up agent or getter to increase the degree of vacuum. . . . It is well known that strontium is not as stable as barium. . . . It is appellant’s view, therefore, that he produced an unexpected result when he found that the percentage of strontium could be increased up to 50%. . . . We think it is obvious that the largest proportion of strontium which would remain stable in air would have been regarded as desirable by those skilled in the art. . . . Appellant is not entitled to a patent monopoly for experimenting.” Cooper, 32 U. S. P. Q. 249.

“The use of this alloy permits double the speed possible with the best high-speed steel, and its utility, translated into money savings from speed of operations in all branches of metal manufacture, is rightly characterized by counsel as stupendous. . . . This quality of red hardness from the degree of about 600 up to about 1000 (centigrade) was entirely novel in any commercial existing alloys, and the stated ternary compound was unknown to the art, and so was itself novel. . . . When later he made the ternary compound he found that he had a new material which, because of its hardness, would have been useless for some of the purposes of his binary patents, and which developed a new characteristic before unknown to the art. We are unable to give Haynes’ binary patents any substantial force as against the patentability or breadth of his ternary patent.” Haynes Stellite Co. v. Chesterfield, 22 Fed. (2) 636, 637.

“Novelty in proportions involves something more than merely figuring out differing proportions that were well

known before. A new metal must be developed, in the sense that new results come from the new proportions." *David Belais, Inc. v. Goldsmith Bros. S. and R. Co.*, 6 Fed. (2) at 933.

"Novelty of proportions in the sense of the patent law involves something more than figuring out proportions differing from any that were known before. It involves new results from new proportions, developing a new metal, or, it may be, an old metal with new characteristics of structure or performance, embracing entirely new, or at least substantially enhanced, qualities of utility. . . . Vanadium was an alloying metal of the prior art, known to be useful in producing certain properties and free to be used by anyone desiring them. To constitute invention in the continued use of vanadium, it must appear that some new property had thereby been attained or some newly useful result had been achieved." *Bethlehem Steel Co. v. Churchward I. Steel Co.*, 268 Fed. at 364, 365.

"Claim 2 adds the constituent thorium. The Examiner has not pointed out where an alloy of this type containing thorium is disclosed, merely basing the rejection on the ground that thorium has been customarily used to aid in the production of the specific properties. We believe it is not clear, however, that the effect of thorium, in this relation, could be said to be apparent beforehand. Claim 2 is considered allowable. Claims 3 and 4 are limited to such percentages as to clearly avoid Terrisse. These claims require the presence of 90 and 75 per cent, respectively, of tungsten. Terrisse discloses a percentage of about 12 of tungsten. This limitation together with the fact that the alloy must also contain vanadium and silicon is considered to constitute patentable novelty over Terrisse." *Laise*, 8 U. S. P. Q. 62.

"The alloy is similar in character to that of the Koster patent relied on by the Examiner in rejecting the claims. . . . It may well be that applicant's alloy is embraced

within the somewhat prophetic suggestion of . . . Koster but the chances of producing the highly useful material here claimed by following such suggestion seems to us to be rather remote, especially as the patent indicates that vanadium is a mere equivalent for cobalt. . . . The claims on appeal all involve the use in an alloy of the Koster type of not to exceed 3% of vanadium, as the use of such amount of this material results in an alloy especially useful for machine tools, and especially as this particular utility is not taught by Koster, we think the claims on appeal should be allowed." Miller, 26 U. S. P. Q. 337.

"Adamite has characteristics of structure and performance which distinguish it scientifically and commercially from other metals. . . . While the defendant has met the case with much evidence that the art contained a vast number of alloys of varying degrees of hardness, toughness and strength, produced by the energetic agents of carbon, chromium and nickel, . . . it has not shown that these characteristics or properties existed in the measure, in the combination, and in the peculiar relation in which they are found in Adamite. . . . Its production involves invention." Pittsburgh Iron and Steel F. Co. v. Seaman-Sleeth Co., 248 Fed. at 707, 708, 709.

"The effects which the various elements contained within the alloy produced have all been known for years to the art, and the worker in the art having the reference patents before him would have no difficulty in producing the effect which he desired to produce in an alloy as to hardness, ductility and corrosion resistance. Where the component elements of alloys are the same and where they approach so closely the same range of quantities, as is here the case, it seems that there ought to be some noticeable difference in the qualities of the respective alloys. None has been pointed out in this case, except those qualities which have been well known to the art." Becket, 33 U. S. P. Q. 35, 36.

"Plaintiff made an important advance in the practical art of electric resistance material. He has produced an alloy which lasts 150 times as long as anything in the prior art. . . . That the prior art abounds in references to a chromium-nickel alloy as a useful resistance element is not denied. . . . Anyone skilled in the art would have to do much experimenting to reach a practical workable alloy. No one ever did make such an alloy." *Hoskins Mfg. Co. v. General Electric Co.*, 212 Fed. at 429, 430.

"Before Welsbach there was and could be no art in pyrophoric substances, because the basis of all art, certain knowledge, was lacking. This patentee taught how certainly and knowingly to produce that which had been observed indeed, but not understood. Such invention is indeed pioneer. . . . They evidently thought they were observing the behavior of pure cerium. . . . Prophecy is often greater than invention, but it is not patentable. . . . The usefulness of an alloy . . . was Welsbach's plainly disclosed invention." *Treibacher Chemische Werke, etc. v. Roessler & H. C. Co.*, 214 Fed. at 412, 413.

"Appellants have discovered that if the iron which ordinarily is present in cements of the type under consideration in amounts of between 5 and 15 per cent, is reduced to less than 1.5 per cent the polished surface will be translucent. . . . We have carefully considered the French patent but we find nothing therein suggesting that the elimination of iron would result in translucency, and we have no evidence before us showing that this would be the obvious expectation of one skilled in the art. . . . The French patent cannot be properly combined . . . to anticipate." *Galogeropoulos*, 8 U. S. P. Q. 71.

## V. Chemical Compounds

"It is now the well established practice in chemical cases not to assume that untried chemicals will have the same effect as others unless there is such a structural



similarity as to suggest to those skilled in the art that the result would be substantially the same. We have had no satisfactory reason presented to us for causing us to conclude, merely because certain salts of mercury are effective as disinfectants, that all salts of this metal would also be of this nature." Kharasch, 19 U. S. P. Q. 185.

"To support a patent, the new characteristics of the composition must be other than, or not confined to, a mere augmentation or diminution of the known characteristics of the several ingredients which is in correlation with the increased or diminished amount of the respective ingredients entering into the composition. . . . As some oils have an asphaltic base, and others have not, and as the two appear to have been used indiscriminately in the prior treatment of roads, and as the relation of the quantity of asphalt and that of oil in an asphaltic oil residuum, called for by some of the earlier patents, depends upon the extent of the distillation or the concentration, it is difficult, if not impossible . . . to say that there was any well understood or defined gap between the asphaltic treatment or construction and the oil treatment, or that the one was not the obvious outgrowth and development of the other. But if, indeed, a gap did exist between the use of oil emulsions and asphaltic emulsions, the patent to Butterfield stands as a refutation of any contentions that it was Van Westrum who bridged the gap." *Bituminous Products Co. v. Headley Good Roads Co.*, 2 Fed. (2) at 86.

"The alizarine of madder . . . was an old article. While a new process for producing it was patentable, the product itself could not be patented, even though it was a product made artificially for the first time, in contradistinction to being eliminated from the madder root. Calling it artificial alizarine did not make it a new composition of matter, and patentable as such, by reason of its having been prepared artificially for the first time from anthracine, if it was set forth as alizarine, a well



known substance." *Cochrane v. Badische Anilin and Soda Fabrik*, 111 U. S. at 311.

"While appellants might be entitled to a patent on a method of purifying alpha alumina, they would not be entitled to a patent on the article alpha alumina, a natural product, merely because of the degree of purity of the article." *Ridgway*, 25 U. S. P. Q. 203.

"Douglas, the inventor, conceived the idea that, if pectin concentrate could be obtained of sufficient strength, it would be possible to add this concentrate to a mixture of fruit juice and sugar. . . . He also discovered that pectin itself, if substantially rid of sugar would not solidify. . . . He expressed the juice from apples to rid them substantially of their natural sugar . . . and he boiled the pomace to convert the pectin to . . . soluble form. . . . The defendant has not offered a particle of written evidence to establish the uses it relies on. Most of them are very old . . . valid." *Douglas Pectin Corp. v. Armour & Co.*, 27 Fed. (2) 815, 821.

"Even if it were merely an extracted product without change, there is no rule that such products are not patentable. Takamine was the first to make it available for any use by removing it from the other gland-tissue, . . . it became for every practical purpose a new thing commercially and therapeutically. That was a good ground for a patent." *Parke-Davis and Co. v. H. K. Mulford Co.*, 189 Fed. at 103.

"The claims read: 13. A thickener . . . Appellant's processes for disuniting the calcium elements from the calcium compound in the prepared grimes are substantially those disclosed in the prior art relating to the disuniting of calcium elements from gum arabic an — unprepared gum. Nevertheless, there is nothing in the prior art that would even tend to suggest that such processes, when applied to prepared gums would produce appellant's superior thickener. . . . In *re Wietzel* . . . is not applicable. Appellant has produced a superior

product . . . it was not suggested by the prior art, and involves invention." Pfister, 25 U. S. P. Q. 363, 365.

"Paper pulp obtained from various vegetable substances was in common use before the original patent was granted to Watt and Burgess, and whatever may be said of their process for obtaining it, the product was in no sense new." The Wood Paper Patent (American Wood Paper Co. v. Fiber Disintegrating Co.), 23 Wall. at 596.

"Caro's coloring matter is superior to any previously known in the art of dyeing as regards fastness to water. . . . It does not blend or run when wetted. . . . He was entitled, . . . to make a broad claim for the product." Pickhardt v. Packard, 22 Fed. at 531.

"The product can be identified by the characteristics specified. It dyes by the addition of acid to the bath, and retains the original fuchsine color. The description of the process informs those skilled in the art how to make the product. . . . The patent does not fall within the category of those in which the claim is limited by its terms to a product produced by a specified process . . . nor of those in which the article is old, but is made by a new process, or made by machinery, instead of by hand." Holliday v. Pickhardt, 29 Fed. at 860, followed in Read Holliday & Sons Ltd. v. Schulze-Berge, 78 Fed. at 494.

"The Woehler compound was the highest development of the prior art in calcium carbide. . . . A new article of commerce is not necessarily a new article patentable as such. But patentable novelty in a case like the present may be founded upon superior efficiency; upon superior durability, including the ability to retain a permanent form when exposed to the atmosphere; upon a lesser tendency to breakage and loss; upon purity, and, in connection with other things, upon comparative cheapness. So, as supplementing other considerations, commercial success may properly be compared with mere laboratory experiments." Union Carbide Co. v. American Carbide Co., 181 Fed. at 106, 107.

"The only novelty claimed for the patented powder is that it is nonhydroscopic. . . . It . . . possesses peculiar utility and commercial value." *Hemolin Co. v. Harway Dyewood and E. Mfg. Co.*, 138 Fed. at 54, 55, 56.

"The patent in suit describes a new product with such clear marks of identification that it can readily be recognized aside from the process for making it. The patent also describes a process for making it which was new, and up to the present time is the only known process by which it can be produced. Since, then, there was novelty both in the process and product, Hinsberg might have had one claim for the process and another claim for the product." *Maurer v. Dickerson*, 113 Fed. at 874.

"Pectin and gelatin lump because they are both gums and their lumping is avoided by exactly the same expedient. It is not necessary that two materials be exactly the same to be regarded as analogous in the eyes of the law. . . . The only purpose of using finely divided sugar is to have the sugar particles correspond in size with the particles of pectin so that they will not separate in the package. . . . A patentee may not arbitrarily select a point in a progressive change and maintain a patent monopoly for all operations in that progressive change falling on one side of that arbitrarily selected point. It is only where the selected point corresponds with the physical phenomenon and the patentee has discovered the point at which that physical phenomenon occurs that the maintenance of a patent monopoly is admissible." *Kwik Set, Inc. v. Welch Grape Juice Co.*, 32 U. S. P. Q. 106.

"Appellant attempts to distinguish from the Klever patent by pointing out that Klever uses such preparations as by themselves are insoluble in mineral oils, while he employs . . . soluble. . . . As said in the opinion of the Examiners-in-Chief, this distinction appears to be without force and immaterial since the object sought in both cases is not a solution . . . but a vehicle. . . . So

long as this result is obtained, the solubility or insolubility . . . is immaterial." In *re Pratt*, 224 O. G. 1407.

"It took no invention . . . to infer that the presence of silica in the Italian chalk was what gave to it its utility as a billiard-chalk. . . . The Italian chalk had not yet been analyzed by others. But the analysis . . . is not . . . an inventive act. . . . It was research, but not patentable discovery. . . . The patent . . . seeks to exclude the use, by others, of pulverized silica in any proportion. . . . This the state of the art will not justify." *Hoskins v. Matthes*, 108 Fed. at 411.

"The discovery by analysis that a reduction in the propane content of the mixture would enable the butane content to be materially increased, and with it an increase in the yield of the resulting gasoline, would not involve invention." *Carbide & Carbon Chemicals Corp. v. Texas Co.*, 31 Fed. (2) 34.

"Soaps made with the purer carbolic acid which existed in 1867 may be applicable to purposes to which soaps made with less pure carbolic acid cannot be applied, but that shows only a difference in degree and not invention." *Buckan v. McKesson*, 7 Fed. at 107.

"The essential part of the invention . . . consisting in the employment of lime-putty, or lime mixed with water, so as to be of the consistence of glazier's putty, with some non-conducting fibrous material. . . . The nearest approach . . . is to be found in the feltings or sheets of asbestos and lime, which were not plastic. . . . These . . . do not anticipate it." *United States and F. S. F. Co. v. Merrimack Mfg. Co.*, 9 O. G. 202.

"From this publication . . . the following facts were known to dyers. . . . Alizarine . . . is soluble by the ordinary alkalies, as borates, etc.; . . . the product . . . is a salt more or less soluble in water. . . . He gave the idea . . . any one skilled in the art, experimenting with the substances as named, . . . would . . . as appellant has done, have produced the same compound which he

claims as his own discovery." In *re Schaeffer*, 66 O. G. 514.

"Hoffman having disclosed the unalkylated dyestuff prior to any claim made by Bender for the subject-matter of his application and it being admitted in Bender's additional French patent that the process of alkylation was sufficiently well known, and the other patents that have been heretofore referred to also fully setting forth the process of alkylation, it seems to me that any one skilled in the art could produce the alkylated dyestuff of the issue without making any invention." *Bender v. Hoffman*, 85 O. G. 1737.

"The applicant's invention consists in producing a color . . . composing them of threads mixed half and half of some aniline color and white, or one aniline color and another. . . . Patent refused." *Ex parte Landenberger*, 1871 C. D. 179.

"While vaseline is a product of petroleum, it is . . . different from the other products of petroleum, and, when combined with linseed oil and the other coloring matter . . . presents an ink, as a finished entirety, very different from the old printer's ink, and different in just those respects that make one adaptable to stencil printing and the other unadaptable. This constitutes a new discovery in the art of printing, just as much as if its elements, or a portion of them, were derived from some substance hitherto unrelated to printing ink. . . . The patent is valid." *A. B. Dick Co. v. Belke and Wagner Co.*, 86 Fed. at 150.

"He was the first to prevent the escape of ammonia from a detergent by interposing a coating between it and the other decomposing ingredients. To this extent he accomplished a new result and he did it in a manner never attempted before." *Columbia Chemical Wks. v. Rutherford*, 58 Fed. at 791.

"The abrasive most commonly employed is carborundum. . . . The 'binder' most commonly used is any kind



of lubricant. . . . The improvement claimed was a change in the 'binder' from oil to starch. . . . Appellant's mixture accomplishes the same purpose as the oil binder mixtures with equal results and with a material saving in time. . . . With this close issue of fact, the court can make good usage of pertinent legal presumptions. One of these is that the granting of a patent carries with it the presumption of novelty. . . . Another is that one attacking the validity of a patent is required to make good that attack with reasonable clearness. . . . We think the patent should be held valid." *Zip Mfg. Co. v. Pusch*, 2 Fed. (2) at 829, 830, 831.

"This composition is produced by dissolving a wax or waxy body in a hydro-carbon oil and the subsequent precipitation of this wax, in a gelatinous state, by adding an alcoholic body capable of being mixed with the solvent which is preferably benzol or its homologues. . . . His remover saves time and money and is superior. . . . Ellis was the first to produce such a remover. It is the hunter who actually brings down the game who is entitled to carry it home." *Chadeloid Chemical Co. v. Wilson Remover Co.*, 224 Fed. at 482, 483.

"In the practical determination of questions of alleged infringement, the problem is very different when we are dealing with a chemical compound than it is when we are dealing with a machine. Such observation as the eye can give to the machine at rest and in action, illuminated by a comparison of the co-ordination of its parts with that of like parts in other machines, will be ordinarily sufficient to determine its classification. Far different is it with a chemical compound. No mere observation by the eye, supplemented even by the taste and touch, can go very far towards a solution of the problem. The same mysterious forces through whose action and reaction the compound was produced must be availed of to disintegrate and disrupt, before there can be any assurance of what it is we have before us. Hence it is that so-called

'Tests' are devised by those skilled in the art and science of chemistry, which in their opinion, as experts, will reveal the secrets of the composition sufficiently to make the answer to the question positive enough to support the judgment of a court. . . . Some of these tests will be of great significance . . . others will be of but minor importance. . . . It may be that . . . the patentee had selected identifying tests broader than he was entitled to. . . . But, when the body under investigation fails to respond to the specific tests the patentee has himself selected, he certainly cannot fairly insist that it is identical with his product." *Matheson v. Campbell*, 78 Fed. at 917, 918.

"This application discloses a composition for polishing. It is described as consisting of paraffin, kerosene and grease such as cup grease. The claims on appeal are, however, broadened in scope by the use of the word 'comprising' instead of 'consisting of.' As a result any reference showing the three ingredients named anticipates them even though the reference shows additional ingredients." *Rawles*, 3 U. S. P. Q. 199.

"As No. 348,073 does not claim the composition of matter, although it describes it, that composition must be regarded as disclaimed, and as being public property, and there was no invention in applying it to paper, as claimed in the patent sued on." *Underwood v. Gerber*, 149 U. S. at 231.

"It is argued . . . that in view of the disclosure . . . of a bile medium for blood culture composed of bile, 900 cc, glycerine, 100 cc, and peptone, 20 grm, appellant had done nothing more than to omit peptone, and change the proportions . . . and that such modifications did not involve invention. . . . Appellant's product is . . . differing in kind and character." *Faunce*, 24 U. S. P. Q. 254.

"The patent was 'composition of matter.' . . . In the defendant's affidavit no denial . . . is made, but it is affirmatively stated that it is operating with a machine pat-

ented in 1904. . . . I have not the 1904 patent before me, and am only informed of what it embraces by the decided cases referred to, and these to my mind do not show that the composition patented in the patent [in] suit comprises any combination of matter in public use generally prior to the issuance." "400" Products Co. v. Certain-Thyson Milk Co., 293 Fed. at 942, 943.

"What Rodman has done is merely to use for a combination of charcoal and coke an energizer formerly used for charcoal only. There seems to be no claim that the patented compound is superior to the charcoal and alkali compound previously used, except in point of cheapness, availability, and strength. . . . The claims in suit lack invention." Rodman Chemical Co. v. Steel Treating Equipment Co., 288 Fed. at 475.

"Abbott . . . made a novel, useful, and inventive use of colloids and lubricants through the aid of penetrants. . . . Finding, then, in Abbott's disclosure, in a high and unusual way, the several elements of marked originality in a practically unoccupied field, of surprising efficiency, of prompt acceptance. . . . We accordingly hold the patent valid." Polygon Products Corp. v. Kant-Rust Products Corp., 292 Fed. at 570, 572.

"A formula . . . published by Baron Liebig . . . is identical with the patented formula . . . except that the Liebig formula . . . called for ground bone instead of dissolved bone, and calcined plaster instead of ground plaster. . . . They have substituted . . . one well-known form of bone phosphate fertilizer for another well-known form. . . . When plaster for fertilizing purposes . . . is mentioned, it seems to be generally understood to be ground plaster, and certainly required no invention to make use of it in the Liebig formula." Boykin v. Baker, 9 Fed. at 699, 702, 705.

"A . . . composition for casting . . . consisting of paraffine, stearine, and pulverized sugar. . . . The patent granted to Henry Hirsch . . . does not anticipate the

complainant's patent. . . . The compound covered by the Hirsch patent consists of paraffine, bees-wax, and gypsum." *Kiesele v. Haas*, 32 Fed. at 794, 795.

"This broad monopoly can be granted for a true discovery only, and not for the mere improvement of a known composition. . . . Given, through such publication of the processes in the prior patents, like ingredients, with coagulation of the albuminoids and resultant product clearly set forth, there was surely no pioneer discovery in chemistry on the part of Van Ruymbeke. . . . The contention that these prior patents must be treated as failures—as mere paper patents of no practical value—is untenable. . . . The testimony . . . offered to overcome their presumptive value relates only to the patents of Halverson, North, and Terne. That referring to the Halverson process is entirely hearsay . . . that as to the trial of the North process merely states the conclusion of the witness that 'it was not practical,' without explaining the circumstances; and finally, in reference to the Terne patents, which are now owned by the appellant, its president states . . . "the process could not be made profitable,' leaving the cause unexplained. . . . No discovery was made by Van Ruymbeke to authorize a monopoly of the product described." *National Chemical and F. Co. v. Swift and Co.*, 104 Fed. at 89, 91, 92.

"We are not able to think that the difference between a surface permeation and saturation and a saturation which goes to the center of the sheet is in itself anything more than a difference in degree. . . . It may be conceded that Wright attained a degree of saturation . . . never before attained, thus making the product more useful . . . but if, in so doing, he employed anything more than the natural efforts of a skilled workman . . . it consisted in finding a peculiar material . . . but the specification leaves us uninformed as to what such material is or how to find it." *Continental Fibre Co. v. Formica Insulation Co.*, 287 Fed. at 456.



“Claim 2 . . . ‘A deodorizing material consisting of a solid cake of paradichlorbenzol and an odoriferous substance incorporated.’ . . . Paradichlorbenzol . . . is a chemical whose properties and qualities were well known to chemists. . . . It was common practice to combine perfumes . . . with the deodorant. . . . Appellants’ combination did not measure up to the standards of patentable invention or discovery.” *U. S. Sanitary Specialties Corp v. West Disinfecting Co.*, 3 Fed. (2) 997.

“A remedial compound which is nothing more than such a compound of medicinal agents as could be made by the exercise of the skill of a physician is not patentable.” *Ex parte Crippen*, 43 Ms. D. May, 1890; *Hart’s Digest* at 238.

“The patent . . . has . . . nothing to do with the ingredients as such . . . but only with the mixing of them, so that the ingredients will be protected . . . the protecting ingredient being usually an oil. . . . ‘Oil . . . was old in the published art.’ . . . It is obvious that its effect as a binder . . . would be substantially the same. . . . It is not material whether or not this particular protective virtue was then pointed out. . . . Claims . . . are invalid.” *Scofield v. Rodman Chemical Co.*, 290 Fed. at 170, 171.

“As charcoal and the diamond are alike chemically composed of carbon, yet are very different substances in the arts, and are used for different purposes, so quartz and infusorial earth, though chemically similar or substantially identical, are dissimilar in the uses to which they are adapted. . . . Powdered quartz has been found to possess qualities which make the plaintiff’s article the only efficient and useful filler known to the cabinet manufacturers of the country. . . . Decree . . . against the defendants.” *Bridgeport Wood Finishing Co. v. Hooper*, 5 Fed. at 68, 71.

“The prior art had no teaching on the subject, and Byerley discovered it, not by any process of reasoning or



building upon former methods, but accidentally and without design . . . carried the distilling process beyond the usual point, and . . . found . . . the artificial asphalt." *Byerley v. Sun Co.*, 184 Fed. at 456.

"Culmers' product is a homogeneous mass. This cannot be said of the Byerley samples in evidence . . . they are at the present time inferior for paving purposes to those of the Culmers. . . . It is not shown that these differences are traceable to the difference in . . . residuum treated. . . . Culmer products . . . patents in suit . . . are . . . valid." *Standard Asphalt & R. Co. v. American A. & R. Co.*, 203 Fed. at 513.

"The patentees were not the first to discover the fact that reduction of the free fatty acid content of the coconut oil would tend to obviate rancidity in products into which this oil entered. If, therefore, these patentees succeeded in eliminating 'principally' or wholly the free fatty acids from coconut oil, their discovery was the way in which this could be done, and not that its reduction or elimination would improve such a product." *Hebe Co. v. Enz*, 283 Fed. at 978.

"An improvement in the use in combination of oxalates, or oxalic acid, and Prussian blue . . . for the purpose of manufacturing a coloring matter. . . . A mere abstract discovery or knowledge, by others, of the preparation of Prussian blue, as described in the patent, or the properties and effect of oxalic acid, in combination with Prussian blue, unless such knowledge was in actual practical use prior to plaintiff's discovery, will not defeat his patent." *Stephens v. Felt*, 22 Fed. Cas. No. 13,368a.

"Broadly stated the invention consists of a baking preparation in which the phosphoric acid element is, practically, in a granular condition free from pulverulent phosphatic material. . . . This granular material possesses peculiar and distinctive properties and characteristics of great value. . . . In determining the question of invention each case must depend upon its own facts, the

inquiry always being whether what has been done required the exercise of the inventive faculties. Has a new or better result been obtained? Is it cheaper and more durable? Has it new capabilities? Does it perform new functions?" *Rumford Chemical Wks. v. New York Baking Powder Co.*, 134 Fed. at 385, 386, 388.

"Any change in form from a previous condition may render the article new in commerce as powdered sugar is a different article in commerce from loaf sugar. . . . But to render the article new in the sense of the patent law, it must be more or less efficacious, or possess new properties by a combination with other ingredients; not from a mere change of form produced by a mechanical division. . . . Where certain properties are known to belong generally to classes of articles, there can be no invention in putting a new species of the class in a condition for the development of its properties similar to that in which other species of the same class have been placed for similar development; nor can the changed form of the article from its condition in bulk to small particles, by breaking or bruising . . . or other similar mechanical means, make it a new article in the sense of the patent law." *Milligan and Higgins Glue Co. v. Upton*, 97 U. S. 7.

"In respects of the foregoing patents we think that it is sufficient to say that in none of them did the patentee have in mind the problem which confronted Lukens, nor did any of them teach the art how to secure the combination of tensile strength and resistance to the effect of acids, in the presence of electrolytic action, essential to the production of a useful storage battery container. In connection with Conboy it must be remarked that the usual asbestos of commerce in the United States is the fibrous chrysotile asbestos which is not acid resistant. . . . The at first prevalent incredulity of the trade, and then the rapidly increasing acceptance and the broad development of the commercial use of such boxes must tip

the scales in favor of novelty, utility and invention." National Battery Co. vs. Richardson Co., 17 U. S. P. Q. 61, 63.

"He also states that by mixing ammonium nitrate with diammonium phosphate unexpected results are produced and says: 'It appears from this that in applicant's composition not only does the diammonium phosphate overcome the explosiveness and deliquescence of ammonium nitrate but the ammonium nitrate overcomes the instability of diammonium phosphate.' " Hecht, 19 U. S. P. Q. 163.

"The difficulties of the problem heretofore as argued by appellant lie in the fact that the tartar of the teeth in spite of a considerable difference in hardness is similar in composition to the teeth themselves. Lime dissolving media therefore, it is argued, will attack the enamel of the teeth and endanger the latter. The peculiarity of the salts of sulphonated oil as argued by appellant lies in the fact that they do not chemically affect inorganic lime compounds but by dissolving and emulsifying the organic substances loosen the texture of the tartar and permit its removal in the form of a colloidal suspension. This is effected in a purely physical way thereby avoiding danger to the teeth. . . . Claims 17, 18 and 19 are limited specifically to a dentifrice containing Turkey red oil or a sulphonated castor oil and it is our view that the position taken by the examiner that the use of this specific material in cleaning compositions would not amount to invention when substituted in the dentifrice such as that of Staegemann overlooks the distinction of the effect on the enamel of the teeth which is apparently not suggested by the use of this ingredient in soaps." Braunlich, 14 U. S. P. Q. 286.

"The prior art does not suggest in any way the use or availability for use of glyceride of bile as a medicinal composition or in a dentifrice. . . . The prior art does not show any combination of glycerine and bile without

other added elements. . . . The proportions of bile and glycerine are critical in their nature." Faunce, 24 U. S. P. Q. 257.

"He then combined triamylamine and cresol, and also triamylamine and hydroquinone, and used these combinations, separately, as inhibitors. The result of such combinations was a much greater inhibition than that which followed the use of either constituent thereof, separately. . . . The examiner allowed claims." Burk, 24 U. S. P. Q. 217.

"In view of the deleterious effect of the Plaster of Paris which Cravens considered an essential ingredient. . . . He did not disclose the means. The Cravens patents do not anticipate." A. O. Smith Corp. v. Lincoln E. Co., 29 U. S. P. Q. 69.

"There seems to be no question that erythrosine is a well known product. . . . Certain of the references show it is customary to provide a dry mixture of old ingredients which may at some future time be dissolved in water reacting to form a desired compound. . . . The patents . . . are from a non-analogous art, but they are cited to illustrate the fact above stated that a mechanical mixture of certain ingredients which when combined with water will react, is well known. . . . There was invention." Bates, 33 U. S. P. Q. 50.

"The specification goes on to describe the manner of treatment of the weak pectous liquor, using malt diastase as an example. . . . There is no proof that anyone prior to Douglas used his method of eliminating starch from pectin, so as to clarify the product. . . . While some processes of reason pointed to the method finally adopted that does not indicate that Douglas was following a plain course." Douglas Pectin Corp. v. Armour & Co., 27 Fed. (2) 822, 823.

"It is immaterial that some of the patents cited do not specify asphalt in combination with sulphate of copper. They all deal with equivalent metallic salts employed as

hardening agents in combination with analogous bituminous substances. . . . All the elements in this patent, or their equivalents, have been frequently employed in some combination for the production of the same or a kindred product, their functions remain unchanged. . . . A better result is obtained but this does not amount to invention.” *Western Willite Co. v. Trinidad Asphalt Mfg. Co.*, 16 Fed. (2) 450.

“The patent to Kessler . . . teaches the use of triacetin as a substitute for camphor in pyroxylin plastics. . . . Benedictus taught the making of a strengthened article by interposing a certain type of plastic material between two sheets of glass; Kessler taught the making of an improvement in such plastic material; appellant takes the improved material and uses it in lieu of that used by Benedictus. Nothing inventive.” *Clewell*, 24 U. S. P. Q. 299, 300. *Contra Fulweiler*, 24 U. S. P. Q. 268.

“In our case, Donner did not claim to have discovered depilating agents, nor did he claim to have discovered that colloids or colloid-like substances were capable of holding liquids in suspension. He was the first to perceive that certain colloids or colloid-like substances were capable of acting as a vehicle to hold the depilating agents in stable suspension and thus to produce a more satisfactory depilatory than any yet offered to the public.” *Donner vs. Sheer Pharmacal Corp.*, 17 U. S. P. Q. 123.

“This invention relates to the stabilization of motor fuels. . . . The claims in the patent do not cover the inhibitors covered by the appealed claims, nor do the present appealed claims cover the species of inhibitor claimed in the patent. Applicants have shown that the type of inhibitor involved in the appealed claims give materially improved results over the species claimed in the patent. The record discloses that it cannot be predicted with certainty which substances will be effective inhibitors. There is clearly a patentable distinction.” *Calcott*, 26 U. S. P. Q. 99, 100.



"In appellant's product and process the minimum amount of vitamin D in a loaf of bread is predetermined by the quantity of activated ergosterol used as an additional ingredient, and thus a uniform quantity of vitamin D is found in the product. . . . Appellant's process and product . . . was not obvious from the prior art, and he is entitled to a patent therefor." Tisdall, 32 U. S. P. Q. 323.

"In his specification the appellant states that prior to his present invention he was of the opinion that in order to be effective the inhibiting material must be soluble in the pickling bath which belief greatly limited the field of his search for better and cheaper materials for this purpose but he has discovered that insoluble material can be used if it be triturated with a colloidal or buoying material which will aid in suspending the insoluble material in the liquid bath so that it may be diffused throughout the same. This colloidal material is the same evaporated sulphite pulp waste liquor described in the Gravell et al. patent as a foam producing material, and serves both as a foam producer and a buoyant material in appellant's pickling bath. . . . The substitute claim 1 and claims 4 and 8 are all limited to an insoluble material triturated in a mixture of the same with the colloidal material and, as a means for enabling the use of insoluble material, we think these three claims are allowable." Gravell, 13 U. S. P. Q. 70.

"Appellant contends that the paraldehyde used with nitrocellulose in the patent to Strehlenert does not teach the use of this material as a plasticizer. The paraldehyde is described as a solvent for rendering the artificial silk non-hydrosopic and while it may be true that, in a general way, there is a close relation between the solvents and plasticizers, it is clear that a plasticizer must have certain properties when employed with cellulose, particularly for rendering films flexible, which are not required of a solvent to be employed in the usual manner. It is

our opinion that there is nothing in the use of paraldehyde with nitro-cellulose for rendering the artificial silk non-hydroscopic that would obviously suggest that this chemical would produce the desired flexibility in photographic films." Carroll, 16 U. S. P. Q. 408.

"Bonding . . . sheets of safety glass . . . It was old to employ nitrocellulose as a bond . . . Littmann discloses appellant's plasticizer with nitrocellulose. . . . When the plasticizer of Littmann and appellant is used, discoloration by the action of light is to a large extent prevented but there is nothing in the Littmann patent that suggests . . . this property. . . . One who discovers an unexpected result when using an old material in a new way may be entitled to a patent." Speicher, 26 U. S. P. Q. 100.

"The appellant is not entitled to claims on the material in one patent and claims on a particular use of the material in another. In some cases, it may be proper to grant a second patent on a use of the material but it is essential to the validity of such a patent that the new use be an unobvious one or one which would not suggest itself to those skilled in the art." Dean, 27 U. S. P. Q. 27.

"The claim is that by substituting perchlorate of potash for chlorate of potash an advantage . . . is to decrease the susceptibility of the product to spontaneous combustion. . . . Perchlorate had been known as long as chlorate . . . Void." Central Ry. S. Co. v. Unexcelled Mfg. Co., 281 Fed., 141, 142, 143.

"The particular coating used on the foil is designated as a fatty acid which has the formula  $C_nH_{2n}O_2$  . . . Palm fat is not palmetic acid nor is tallow stearic acid . . . is to the Michael patent . . . the proofing composition . . . is applied to cloth . . . no one would be led to the invention by the Michael disclosure. . . . The claims are limited to the fatty acids of the particular formula . . . claims patentable." Torrence, 25 U. S. P. Q. 78.

“The reference relied upon by the examiner is: Brixey, 1,533,374, Apr. 14, 1925. This application relates to rear type projection screens and the sole question involved in this appeal is whether the pyroxylin composition layer of Brixey can properly be regarded as a base for the screen. The layer of glass, that patent states, may be omitted, thus leaving only the tracing cloth and the layer of pyroxylin compound. One reason why the examiner holds that the pyroxylin layer may be deemed a base is because no other matter is included in claim 1 of the patent and the examiner states that therefore this claim is directed to a picture screen made up of this material alone. We cannot agree with this view. The claim referred to calls for a screen which comprises this material but it has long been recognized that the term ‘comprising’ does not exclude other matter than that mentioned in the claim. It is our opinion, therefore, that there is no teaching or suggestion in the patent that the layer of pyroxylin compound may be employed without the tracing cloth. After careful consideration of the arguments advanced by the examiner and by appellant we are of the opinion that it would be unusual to regard a coating applied to a fabric of the nature disclosed in Brixey as the base of the compound structure and we are of the opinion, therefore, that the claims sufficiently distinguish over this patent in specifying a screen having a base of homogeneous material of the character called for.” Troeger, 22 U. S. P. Q. 320.

“The most serious objection to the patent seems to lie in the question whether the substitution of pale blown castor oil for other forms of vegetable oils such as linseed oil, or sulphonated castor oil, can properly constitute invention. The combination is new and the result does seem to have been a product of marked superiority. . . . The result is patentable if a new and useful product is thereby obtained.” *Tumbler v. Baltimore Paint and C. Wks.*, 26 U. S. P. Q. 70.

"In some cases, even though the prior art does teach that the members of a class are generally equivalents to a member or members disclosed, if it develops through subsequent research that some member or members are highly superior to others and therefore not mere equivalents, a second patent may properly be granted." *Bauer*, 23 U. S. P. Q. 324.

"All that Kienle did in his invention was to substitute a drying oil acid for the acids of non-drying oils. . . . Without experimentation both he and . . . concluded . . . that this substitution could be made and that it would probably give an air-drying product. . . . There is no evidence that others sought and failed to produce this air-drying resin. . . . There was no inventive thought." *General Electric v. Paramet Chemical Co.*, 82 Fed. (2) 280. See 26 U. S. P. Q. 71.

"The particular resin used is disclosed in the patents to *Fulton* and *Fulton et al* and since the resin per se is old, the examiner has rejected the claims on the ground that the use of these old resins for impregnating wood, involves no invention. . . . No one of these references indicates that these resins could be used for impregnating wood. . . . He has produced a new and non-obvious result." *Frolich*, 30 U. S. P. Q. 378.

"The request for reconsideration is predicated upon a showing that all vinyl compounds are not satisfactory adhesives when polymerized and that the particular compound here used is greatly superior to others, and particularly to the one to which the *Walsh et al* patent is directed, vinyl acetate. . . . If the quoted statement of the *Walsh et al* patent is merely prophetic, the patent is obviously of little value as a teaching of what may or may not be the vinyl acetate to which the patent is primarily directed. If it is necessary to go through the long list of compounds containing the radical  $\text{CH}_2\text{-CH}$  to determine whether they are suitable. . . . The patent has no

anticipative value. . . . The claims . . . may be properly granted." Bauer, 23 U. S. P. Q. 324.

"There is nothing in the Hopkins patent which would teach the suitability of the particular composition here involved for use as a substitute for the coating employed by Rogers. . . . A satisfactory coating for fastenings must possess, in addition to a high coefficient of friction, both with metal and with wood and satisfactory bonding . . . a considerable resistance to shear and freedom from undesirable odor and taste. . . . There is obviously nothing in the use of a coating material as an undercoat for automobile bodies or similar uses which teaches the above desirable characteristics. While the claims involve broadly a substitution of material, we think it falls within the well-recognized exceptions." Ellsworth, 32 U. S. P. Q. 584.

"Chipman in his specification practically told the whole story of his claimed discovery and invention in a formula which, omitting molecules, is that sodium chlorate plus calcium chloride equals calcium chlorate plus sodium chloride; the essential and efficient weed killing ingredient, frequently sought and here obtained, being a chlorate in combination. Another formula deals with calcium chlorate, the efficient weed killer, and calcium chloride; the latter, though a feeble herbicide, long known and chiefly used to absorb and hold moisture. Calcium chloride with this limited utility adds nothing to and in no way changes the weed killing characteristics of calcium chlorate and together they cannot amount to invention." Chipman Chemical Engineering Co., Inc. vs. Reade Mfg. Co., Inc., 16 U. S. P. Q. 3.

"Appellants . . . admit that the palatable qualities of chocolate compounds are well known . . . do not readily deteriorate . . . but contend that they are the first to utilize a chocolate compound for the dual purpose of preserving dry yeast . . . and producing a palatable food-stuff . . . Cameron also discloses a mixture of yeast with



corn or barley meal . . . with the moisture afterward extracted . . . coated with sugar and finally coated with a thin layer of paraffin or wax. . . . Chocolate compound is an equivalent for corn meal." McLaughlin, 4 U. S. P. Q. 83, 84.

"The only thing which can be said to be novel over the reference is the use of a filler crushed to a fineness of 8.4 microns to 11 microns as a means for increasing the water resistance. . . . A single claim would cover all that is inventive." Storey et al, 4 U. S. P. Q. 98.

"Patent . . . in suit covers a new and useful type of asphalt emulsion, in which a normally non-pourable asphalt is liquefied by heat to produce with clay or an equivalent emulsifying agent and water an emulsion of asphalt in water, which prior to drying is non-adhesive and on drying becomes adhesive and coheres to function as a cement. . . . An emulsion made in accordance with the disclosures of the Raschig patent would be adhesive before drying, and after drying would not harden to function as a cement, but would remain a soft and greasy mass. . . . Emulsions employing a preponderance of clay relative to bituminous material . . . neither anticipate nor render obvious the invention. . . . Emulsions made using soap, starch and the like . . . are unstable and adhesive prior to drying. . . . The Richardson patents . . . emulsion . . . the asphalt is in the outer or continuous phase. Such type of emulsion is adhesive, cannot be diluted with water." Patent and Licensing Corp. v. Bitu-tect, Inc., 21 U. S. P. Q. 141, 142.

"The specification of the appellants recites that the alleged invention has reference to electric lighting devices of the Moore Tube type, and particularly to lamps filled with carbon dioxide. The appellants use, as a tube filling, a mixture of carbon dioxide and one of the rare gases, preferably helium. A specially favorable tube filling is given as 0.1 mm. of carbon dioxide and 2.9 mm. of helium. This mixture, the appellants state, will give the light

radiation of the common gas, while the excess of rare gases will facilitate the starting and maintenance of the electric discharge. . . . The British patentees used the same mixture of gases in the same proportions as those disclosed by appellants. Naturally, unless there were material structural differences in the lamps which they respectively used, the result of the transmission of electric current would be the same, in the quality of lights radiated. If, in the ordinary use of the devices shown by the British patents, the same light characteristics would necessarily follow, then the British patentees are entitled to the benefit of their respective disclosures, and the appellants here cannot claim such a result as a patentable feature." *Skaupy and Pulfrich*, 19 U. S. P. Q. 283, 284.

"In all the prior art there was not a single instance of the solution of nitro-cellulose by a liquid where both the solvent and the coagulant were retained in the final product, nor a single case where either the solvent or the coagulant was so retained, nor a single case where the coagulant was added to the colloid by injection. . . . But was it obvious . . . Why did not Worden, the foremost expert . . . discover and disclose it?" *Therorz Co. v. United States Ind. Chem. Co.*, 14 Fed. (2) 634.

"The article defined in the appealed claims . . . excludes the solid solvents used in all of the references. The Examiner evidently does not intend the use of such solid solvents but merely the use of a volatile solvent as referred to . . . in Bonner. He states that the cellulose derivative esterified with fatty acid . . . can be dissolved or softened in a volatile solvent and when so dissolved or softened they are gelatinized . . . put in a mold . . . and the solvent evaporated . . . That . . . is contrary to the teaching in the patents. . . . The article claims . . . should be allowed." *Hagedorn*, 24 U. S. P. Q. 25.

"The invention relates to an electrical insulating material composed of the fibre obtained from certain por-

tions of the leaves of the Bromelia family . . . shows it to be old to make 'textile fabrics or paper' from . . . Bromelia. . . Appellant appears to have been the first to discover that this material possesses unexpectedly electrical insulating properties. For this reason we think appellant's discovery patentable." Brown, 2 U. S. P. Q. 342.

"The prior art, as shown by these references, shows the use of food materials combined so as to obtain a healthful and sufficient food for animals. . . . The use of yeast in such products has been long known, . . . and that it has also been well known to add materials, including vitamins . . . the D vitamin being introduced by means of violet ray treatment. The art was also acquainted with methods of spraying such products with the material desired to be added. . . . It would be obvious that the drying temperature used should be such as would not destroy the activity of the vitamin." Spohn, 25 U. S. P. Q. 409. See also 25 U. S. P. Q. 410, 411, 412.

"The mere discovery of a quality of sunflower seed oil, not possessed by other vegetable drying oils, cannot be made the basis of a patent when the prior art shows that such oil is of the kind and class that such art taught was useful in the composition of resins of the character here involved." Gauerke, 475 O. G. 4, 31 U. S. P. Q. 333.

"Where an admittedly old bath includes certain ingredients, including liquid or water, it is . . . ordinarily obvious that the solid ingredients may be added one at a time, or be all mixed together before being added as a unit to the liquid. . . . We find no invention in making manganese a part of the composition, instead of using it in conjunction with high acid phosphates of iron but not as part of the composition." Green, 9 U. S. P. Q. 65.

"In view of the fact that the flavoring and non-adhesive qualities of raisin-seed oil, and oils from the seeds of other fruits, were well known . . . the application of such oils to dried raisins and other dried fruits for the purpose

of making them non-adhesive, and for flavoring purposes, would not involve invention." *Forrest*, 8 U. S. P. Q. 186.

"Pectin . . . will not dissolve readily. . . . It may be dissolved in an hour, or upwards, through stirring or washing, but if the dry pectin is first mixed with certain quantities of sugar, the sugar acts as a dispersing agent . . . the pectin goes into solution in a few minutes . . . that sugar is used as a dispersing or dissolving agent . . . with . . . other products does not deny patentability." *Kwik-Set v. Welch Grape Juice Co.*, 29 U. S. P. Q. 116.

"The only advance which the patent purports to claim is in the fluidity of the mix due to the milk contents. . . . The Court properly held the patent void." *Rioux v. Kempner*, 24 U. S. P. Q. 237.

"Lead-acid storage battery. . . . The active agents in the peat employed by Reinhardt . . . appellant employs impure humic acid to obtain results similar to those obtained by the pure humic acid . . . employed by Reinhardt. . . . Properly rejected." *Heap*, 24 U. S. P. Q. 302, 303.

"Patents . . . disclose the use of aluminum soap in stuffing leather. . . . No reference has been cited showing the use of aluminum soap in stuffing the leather employed in gas meters . . . appellant's discovery patentable." *Fulweiler*, 24 U. S. P. Q. 269.

## VI. Of Aggregations

"The case must, however, be very rare in which the bare idea involves invention to consolidate several members into one." *Herzog v. Charles Keller and Co.*, 234 Fed. at 86.

"A patent for a product destitute of properties or characteristics by which it can be identified and distinguished from an old product, and which rests merely upon the difference in the degree of excellence between the two, and not in kind, cannot be sustained." *Blumenthal v. Burrell*, 43 Fed. at 669.

“Dick found that he could make the gummy substance less tenacious by adding to the paraffine one-eighth part of lard. The mixture is gummy and waxy, is still substantially paraffine, and was the result of divers experiments to make paraffine . . . of the best consistency . . . does not seem to be worthy of a monopoly.” *A. B. Dick Co. v. Wichelman*, 108 Fed. at 963.

“Nor can it be said that the properties . . . are an aggregation. If the combination produces new and useful results by reason of the several combined elements and not only the aggregate of the distinct several, it will not be so designated.” *Ward Baking Co. v. Hazleton Baking Co.*, 292 Fed. at 206.

“It would seem, where one does no more than pick out several substances which have already been disclosed as useful in compounds of this nature and unite them in a single compound that invention is not involved. . . . In a hair-treating compound . . . it would seem that so long as there is no chemical combination of substances, nor any new function or effect brought out, but merely the combined functions and effects of the separate ingredients selected, there is produced nothing patentable.” *Ex parte Walker*, 313 O. G. 231.

“So far as the art discloses glyceride of bile had never been used for the purpose suggested by appellant namely, as a dentifrice, or for any similar purpose. Appellant’s dentifrice, therefore, cannot be said to be simply on aggregation. It is, rather, a combination containing an element new to the art.” *Faunce*, 24 U. S. P. Q. 257.



## CHAPTER 9

### ANTICIPATION OF A CHEMICAL APPARATUS

An apparatus for carrying out a chemical process usually depends for its novelty upon its adaptation to carry out a new function. In other words it may be regarded as having parts that cooperate with the material treated rather than cooperating with each other.

To illustrate the view the courts take in passing on patents upon chemical apparatus a few decisions are cited.

#### WHAT THE COURTS HAVE SAID

“Appellant has evidently accomplished an unusual result and by the use of mechanism in which the distinguishing features are the particular speed of the rotor, and the positioning of the top pole piece relative to the rotor. Neither of the references discussed these features . . . and if the patentees accomplish the improved result, it would be purely accidental. . . . Appellant . . . should be allowed apparatus claims.” Johnson, 32 U. S. P. Q. 84, 85.

“Appellant’s oils pass through channels arranged in the catalyst for that purpose while Sutcliffe’s oils apparently simply filter through the pores or interstices of his catalyst. . . . This is new, and . . . justifies holding it inventive.” Oppenheim, 21 U. S. P. Q. 618.

“No claim is made in the application that the results are any different than were the results obtained from the individual use of the various ingredients of the covering mixture when separately used in the art. The cellulosic material is therein described as a material which produces a protective gas, while the asbestos is used to produce a slag . . . the purposes for which these materials were

used in the prior art. If the use of asbestos in conjunction with cellulose produces an unexpected or unobvious result, or if such combination is critical in its nature, the specification does not so recite. . . . It hardly seems that patentability should be conceded." Taylor, 25 U. S. P. Q. 468.

"The claim on appeal recites an apparatus for washing and subsequently chemically treating freshly produced bundles of artificial fibers of a total titer of the order of at least 60,000 deniers on their way between a coagulation bath and a collecting device. This apparatus is comprised of a number of troughs with a pair of squeezing rollers between each pair of adjacent troughs, before the first trough and behind the last trough, and means for independently driving and controlling the speed of each pair of rollers so that the bundle being treated may be moved through the respective troughs under no tension. . . . It seems fairly obvious that the apparatus of the patentees is not adapted for the treatment of artificial fibers of the character defined in the rejected claim. Moreover, it is conceded by the Examiner that the squeezing rollers of the patentees are not arranged for independent operation and control as called for in the claim under rejection. It seems to us therefore that the appealed claim which covers an apparatus normally carrying out a process, which process is held allowable, should also be allowed in the absence of references disclosing this apparatus and without a teaching of modification of such apparatus to perform this new function." Stuhlmann and Weitermann, 22 U. S. P. Q. 401.

"Black's discovery that the presence of sulphur or sulphur compounds in the hydrocarbons treated in a cracking process is the source of corrosion in carbon steel or iron tubes, and his substitution for such tubes of tubes made of iron and chromium alloy or of an iron chromium nickel alloy, with the results above set forth, constitute inven-

tion." Gasoline Products Company, Inc. v. Conway P. Coe, Commissioner of Patents, 31 U. S. P. Q. 410.

"The general aspects of the system are not new nor are the valves per se. . . . It seems to us, however, that it is not proper to anticipate a system organized with a special end in view by bringing together from several patents, the features of the system, unless in their present environment the same coordination and capabilities have been developed. As indicated, such is not the case here." Pelzer, 25 U. S. P. Q. 332.

"This refractory material, as positioned in appellant's apparatus, affords a means of indirect preheating . . . while the heating applied to the articles in the Tunnel by Knight is direct. . . . The patent to Grotz relates to the same art . . . but we do not think the deflector there shown would suggest to one skilled in the art the modification . . . ." Davis, 25 U. S. P. Q. 403.

"In the practical prior art devices (that is to say, low vacuum tubes) the conduction of current depended upon gas ionization. . . . It says that the high vacuum tube of the patent works upon a different principle, that of the pure election discharge. . . . But if Langmuir's invention is so to be defined, it is not the invention claimed." DeForest Radio Co. v. General Electric Co., 283 U. S. 683.

"Laurent made a functionally new use of all these known things when he made an apparatus . . . which while using separated, gas-producing fire-extinguishing substances, such as the old acid and soda apparatus did, and a 'foam-producing substance' such as Gates showed, was an apparatus which did what neither of the others did, namely causes the substances to produce a 'gas-filled foam' simultaneously with the evolution of gases." Foamite-Childs Corp. v. Pyrene Mfg. Co., 3 U. S. P. Q. 97.

"Appellant has presented an affidavit setting forth a highly improved result in the electrical reduction of sugars to corresponding alcohols due to the agitation of the mercury cathode. Since the patentees Earle et al were

not interested in the agitation of the mercury cathode, it was not obvious and uninventive to extend the agitating device of their patent into the mercury cathode to secure an active agitation of the cathode. As shown in the patent any agitation that might be secured would be slight and incidental to the agitation of the solution." Creighton, 2 U. S. P. Q. 6.

## CHAPTER 10

### OF ANTICIPATIONS BY PRIOR PUBLICATIONS

Prior publications have an especial importance in connection with chemical patents. There is no literature in the mechanical arts corresponding to the vast journal literature of chemistry, which is well indexed and describes hundreds of thousands of chemical substances, experiments and factory operations. It is necessary, therefore to indicate how the Courts interpret prior publications. The statute is simple, saying that a new invention is patentable to an inventor only when "not patented or described in any printed publication in this or any foreign country, before his invention or discovery thereof, or more than two years prior to his application." It should be noted that a journal is *prima facie* a publication, whereas no such presumption attaches to a catalog.

#### WHAT THE COURTS HAVE SAID

##### I. Of Laboratory Work

"The transformation of a laboratory experiment into a successful and useful mechanical device is evidence of . . . invention." *Marconi Wireless T. Co. v. DeForest Radio T. and T. Co.*, 243 Fed. at 564.

"The amount of power used by the respondent is approximately . . . negligible. . . . Nevertheless it is power developed. . . . Baily was seeking simply a revolving disk, and not looking beyond that. He did not attempt to transmit that electrical power which . . . was the soul of Tesla's invention . . . enter a decree for an injunction." *Westinghouse E. and Mfg. Co. v. Stanley Instrument Co.*, 133 Fed. at 184, 185.



“There had been suggestions that it would be possible to utilize a gaseous filling. . . . But neither he nor his principals ever did it. . . . Both the commercial and the theoretic art had been put on the wrong road. . . . But not even as a laboratory experiment had a gas-filled lamp lived a commercial life.” *General Electric Co. v. Nitro Tungsten Lamp Co.*, 266 Fed. at 998, 999.

“There is nothing to indicate that that which Woehler did was anything more than to make and describe a laboratory experiment, and, although his work was generally recognized in treatises upon chemistry, it does not appear that any appreciable amount of calcium carbide was made by any person before the present patentee came into the field. . . . Woehler published a mere result of a laboratory experiment which was put to no practical use. . . . We think that there is a patentable difference.” *Union Carbide Co. v. American Carbide Co.*, 181 Fed. at 106, 107.

“Moore’s experiment . . . was published in a well-known technical magazine. . . . It was at most only a laboratory experiment without practical and commercial fruit . . . such disclosures do not enrich the art in the sense required for an anticipation. . . . Abel’s salt . . . does not appear to have ever been used in practice . . . it was not merely a tentative experiment. . . . It was fully described and published in well-known medical journals, and the disclosure would have answered the claims of a patent. . . . It was published as a direction for all who wanted to use it, unlike Moore’s vague disclosures. . . . In view of such publications Takamine cannot claim to have been the first.” *Parke-Davis and Co. v. H. K. Mulford Co.*, 189 Fed. at 108, 110.

“Whatever the truth may be with reference to Dr. Boettger’s experiments . . . they seem to have been simply scientific experiments in the laboratory, in which he ascertained that by preparing and using the material in the way he pointed out nickel could be deposited, and nickel plating, on a small scale, be accomplished. That

is as far as he went. He did not reduce it to a practical art. It does not appear that he ascertained all the conditions necessary to success. . . . This discovery was not employed or used in the general affairs of life. . . . And Boettger's method is not even now used." *United Nickel Co. v. California Electric Wks.*, 25 Fed. at 476.

"They present the story frequently interposed against valuable patents, of laboratory experiments, of announcements . . . the important fact stands in their way that they do not seem to have accomplished the electric weld which is shown." *Thomson Electric W. Co. v. Two Rivers Mfg. Co.*, 63 Fed. at 122.

"Following prior laboratory practice, it was possible to leach and extract the uncovered ore. . . . By repeated dilution the laboratory could, and we will assume, did recover with practical completeness . . . but this had been done with an expenditure of time, labor, and expense out of all proportion to the value of the metal. . . . Moore disclosed a process by which such recovery was made enormously profitable, and by which he turned a dump heap, which under all known processes, machines and laboratory methods, was worthless, into profitable ore, we . . . give little weight to the suggestion that his process . . . involved no invention." *Moore Filter Co. v. Tonopah-Belmont D. Co.*, 201 Fed. at 540.

"Hallock did not investigate the crystalline solid. He made no test to identify it or determine its composition. . . . He did not regard it as worthy of investigation . . . as a whole was a poisonous substance. . . . The Hallock publication, supplemented by the whole body of evidence of prior knowledge, did not disclose the product of the Hinsberg patent, whether the product be regarded in its relation to the art of pharmacy or as a mere chemical substance." *Maurer v. Dickerson*, 113 Fed. at 873.

"The foregoing references. . . . Some of them have nothing to do with Hertzian wave radiation. Others record mere abandoned experiments. . . . An account of

an experiment, by way of suggestion or speculation as to something that might succeed, will not suffice." *Marconi Wireless Tel. Co. v. National Electric S. Co.*, 213 Fed. at 834.

"The distinction as to quantity between scientific culturing experiments and factory processes is not merely in the scale of the operation. The difference is fundamental when the aim is a substantial yield. . . . It is one thing to show that, when yeast is used in fermentation processes, its fermentative power and duration of life will be enhanced by offsetting deleterious acidity or that in producing pure yeast cultures in the laboratory with distilled water, antacid substances should be used, and it is quite another to demonstrate that, when the end in view is the production of large quantities of yeast for its own sake, neutralizers may advantageously be employed. As has so often been said in patent cases, it is the last step which counts." *Fleischman Yeast Co. v. Federal Yeast Corp.*, 8 Fed. (2) at 196, 198.

## II. Prior Work Generally as Published

"It is well established that complete failure by an inoperative and abandoned apparatus cannot defeat a later meritorious and successful invention. If the apparatus did not, when constructed, anticipate the inventive thought, a description of it could do no more." *Permutit Co. v. Harvey Laundry Co.*, 279 Fed. at 718.

"A description which is insufficient to support a patent can hardly be relied on as an anticipation. . . . We have then a prior publication which purports to give a formula for producing an insoluble compound and which omits one of the most important steps, leaving a blank where proportions should be stated with accuracy. Can it be that such a publication anticipated a patent for a soluble product which gives with minute detail all the steps necessary to accomplish that result? . . . The court is familiar

with no authority deciding that a patent can be overthrown by a document, which if its statements be true is, concededly, not an anticipation; and which becomes valuable as a defense only after its falsity is established. . . . The question is, What does the prior publication say? Not what it might have said or what it should have said. The court has simply to consider what the publication question has contributed to the art." *Badische Anilin and Soda Fabrik v. Kalle*, 94 Fed. at 167, 168.

"The defendant's conception of the third method is only an inference from the specification. Inferences as distinguished from disclosures, especially when drawn in the light of after events, cannot be accepted as a basis of anticipation. A patent relied upon as an anticipation must itself speak. Its specification must give in substance the same knowledge and the same directions as the specification of the patent in suit. . . . It is not enough to prove that a method or apparatus described in an earlier specification can be made to produce this or that result." *Skelly Oil Co. v. Universal Oil Products*, 31 Fed. (2) 431.

"The Soxhlet process was never commercialized. . . . It involves a quiescent crystallization. . . . Because the Soxhlet process cannot be operated without crystallization in motion defendants say it is necessary to read crystallization in motion into the patent. . . . You cannot constitute a patent an anticipation by reading into it whatever is necessary to make an anticipation." *International Patents D. Co. v. Penick and Ford Ltd.*, 30 U. S. P. Q. 300.

"In a paper read at St. Louis . . . Nodon used much of the same language. . . . Nodon seems to have been a scientist of standing, working as he did at the Sorbonne and the College of France. . . . It cannot well have been true that he was not competent to know whether he was getting the condenser which he certainly thought he was." *Ruben Condenser Co. v. Copeland Refrigerator Corp.*, 31 U. S. P. Q. 9.

“We do not think there is anything in this article which discloses the desirability of a mixture. . . . The most that can be said of it is that it pointed the way for experiments with mixtures.” *Magress v. Robertson*, 21 U. S. P. Q. 262.

“That description must be such as to show the article described in the patent can be certainly arrived at by following the description . . . without the assistance of local prior knowledge or local prior use in the foreign country where the description is published. . . . The ‘description in a printed publication’ . . . is to be found within the four corners of such printed publication. . . . The limits which he thus, intentionally or not, set to his publication, cannot now be disturbed.” *Fadische Anilin and Soda Fabrik v. Kalle and Co.*, 104 Fed. at 806, 808, 809.

“It is a general canon of construction, applicable to all documents, that the document should be construed as if the Court had to construe it at the date of publication, to the exclusion of information subsequently discovered. In patent cases the observance of this canon of construction has great importance. . . . If these documents require the assistance of experts to aid the Court in construction, the Court is deprived of the benefit of such assistance if the witness is asked to read the document, not in reference to what was known at the date of publication, but to knowledge only acquired at some subsequent date.” *Ore Concentration Co. (1905) Ltd. v. Sulphide Corporation Ltd.* 31 R. P. C. (Supp.), 224 (Privy Council).

“Doing what the German patent calls upon one to do will never replace carbon by tungsten. The process rests upon the theory of replacement, and that theory has no substratum of fact. . . . If the only use of the process is to make the product, such foreign process patent would and should affect an attempt to get American protection for the product. But . . . this German process patent



will not make, and never has made anybody's incandescent lamp filament, and especially will it not make the product of the patent in suit. Therefore in no sense are the two patents for the same invention." *General Electric Co. v. Alexander*, 280 Fed. at 854.

"As a foreign patent it is not so much what could have been made of it as what was inherent in it—not its possibilities, but what it substantially displayed—that is to govern. . . . Neither will it do to say . . . that the loops of Booth, being made of long fibred worsted, would necessarily twist and curl. That is not claimed for them in the patent, and we cannot assume that it was desired or intended." *Hanifen v. Armitage*, 117 Fed. at 847.

"When it is sought to ascertain the state of the art by means of prior patents, nothing can be used except what is disclosed on the face of those patents. Such patents cannot be reconstructed in the light of the invention in suit, and then used as a part of the prior art. . . . Prior patents are a part of the prior art only by what they disclose upon their face. If they are carried into effect in the industrial world, what is learned from that experience also becomes a part of the prior art. An expert, however, cannot take a process patent, which has never been applied industrially, and work the process in his laboratory, and discover therefrom something which is not disclosed on the face of the patent, and then transfer that experience back to the time of the patent, and make it a part of the prior art for the purpose of defeating a meritorious invention." *Naylor v. Alsop Process Co.*, 168 Fed. at 920.

"The applicant insists that diammonium phosphate was not commercially available until 1923 or 1924, which was subsequent to the dates of the references relied upon by the examiner; that according to *Chemical and Metallurgical Engineering*, Vol. 29, published in 1923, it was not regarded as a suitable ingredient for fertilizers by reason of its instability; that as late as 1923 no diammon-

ium phosphate was used in fertilizers for the above reason and for the further reason that at that time it was thought to be one of nitrogen-containing plant poisons. . . . The examiner erred in rejecting." Hecht, 19 U. S. P. Q. 163.

"To circulate water during vulcanizing . . . the patentee Blaker regarded the circulation of water in such a process as 'not completely effective and not entirely satisfactory.' His teaching is, therefore, opposed to the use of such circulating water. Blaker's statement does not state that he or anyone else has used such circulating water but . . . an expression of his opinion. . . . The . . . applicant . . . discloses the method of circulating water and asserts . . . that such process . . . is entirely satisfactory." Laursen, 24 U. S. P. Q. 220.

"By using twentieth century magnifying glasses, a nineteenth century method has been found efficient, which never was so before, and the immensely important point of view of an advanced art is thus unfairly used to discover an original conception never acted on or made anything of, and which never had any practical or beneficial existence." Schmertz Wire Glass Co. v. Western Glass Co., 178 Fed. at 988.

"It is not enough to show, that, by the lucky accident of taking gunpowder of the proper quality, a compound may be obtained which is unlike that indicated by such description. By the light of what Nobel has taught in the patent sued on, much can now be asserted to be seen in what was published before, which no one ever, in fact, saw in it before the original of the patent sued on was taken out. There is no evidence that anyone, from the Turly article . . . made, before the invention in question . . . the safety powder which constitutes that invention. So far from this, the Turly article starts out with the assertion that a mass of liquid nitroglycerine is quite harmless." Atlantic Giant Powder Co. v. Parker, 16 O. G. 495.

“To anticipate, the Woehler compound must be shown to be crystalline. . . . It is not shown that any of the Woehler compound which was made before the application for the patent was crystalline. . . . The defendant’s experts in following the Woehler process used considerable amounts of material and . . . obtained a hard, compact mass of material having no resemblance to the Woehler product as already described. . . . It is enough to say we are not at all satisfied that the defendant’s experts in producing their compound did no more than follow the teachings of the Woehler article.” *Union Carbide Co. v. American Carbide Co.*, 181 Fed. at 108.

“It is extremely important to think, if possible, as of 1901. In this case, that is a troublesome task, because of the extraordinary progress in this art since then, and the consequent difficulty of discarding from consideration many items of after-acquired knowledge. It is also necessary in this case not to accord undue importance to isolated suggestions in scientific papers and discussions. Such suggestions are not infrequently controlling in a well-developed and well-understood art where skilled men can readily appreciate the disclosure. In the infancy of a new, and, at the time, little understood, art, however, the alleged prior art necessary to negative invention must be clear, and doubts . . . resolved in favor of the inventor.” *Kintner v. Atlantic Communication Co.*, 249 Fed. at 77, 78.

“Little attention will be given to the deductions of expert witnesses. A deaf ear will be turned to their ingenious arguments that, by putting together statements in one earlier description with others in another, a complete anticipation can be made out. . . . It may now seem very clear that any omission from the earlier description of an element, quality, or characteristic of the patented thing . . . must have been due solely to the fact that the author of the description thought it was superfluous to mention something. . . . We have nothing the author of

the earlier description did by which to complete, illustrate, or check up what he said. His words . . . we will not be justified in adding to them." *One-Piece Bifocal Lens Co. v. Bisight Co.*, 246 Fed. at 457, 458.

"There is no description of pipe 19 in the Warner patent . . . there was a description of it in the specification as filed, but . . . was cancelled. . . . It is our opinion that no one inspecting the Warner patent would receive any suggestion that the pipe is intended for the purpose set forth in the above copied claims . . . and we do not consider that the public is required to investigate patent files in order to ascertain the purposes of features shown in the patent drawing." *Caldwell*, 32 U. S. P. Q. 129.

"Being warned by the patentee that crystalline mass was split up by hot water, they took extraordinary precautions to prevent it; and they also employed Hoffman's test . . . to determine when their product had become pure. . . . In other words, they added Hoffman's discoveries to those of the prior art in order to demonstrate that such art contains everything discovered by Hoffman." *Farbenfabriken of Elberfeld Co. v. Kuehmsted*, 171 Fed. at 889.

"Knowledge after the event is always easy, and problems once solved present no difficulties, indeed, may be represented as never having had any, and expert witnesses may be brought forward to show that the new thing . . . was always ready at hand and easy to be seen by a merely skillful attention." *Diamond Rubber Co. v. Consol. Rubber Tire Co.*, 220 U. S. at 435.

"With the Shultz process before him, it may be possible for a skilled expert to tan a skin by following what he believes to be a liberal construction of the Francillon specification. . . . The question is, assuming the Shultz process did not exist, does Francillon disclose a tanning process, and by following literally his instructions have you solved the problem of a practical and commercial

method of chrome tanning?" Tannage Patent Co. v. Donallan, 93 Fed. at 820, 821.

"While the Schwartzkopff patent disclosed, in a general way, the idea of a dredging machine intended to operate as the Bowers machine does, it did not describe a machine which was effective to carry such an idea to successful result. This . . . left the claims of the Bowers patent . . . pioneer invention." Bowers v. Pacific Coast D. and R. Co., 99 Fed. at 748.

"The Harthans may for the first time have clearly proposed two . . . but coupled with the proposal were no practical, efficient means of obtaining such . . . and . . . 'By their fruits ye shall know them' . . . Curtis . . . entered a field that . . . was barren." International C. M. T. Co. v. Wm. Cramp and Sons S. and E. B. Co., 211 Fed. at 144.

"In the provisional specification of the Hyatt British patent appears . . . Hyatt abandoned this proposal when he came to make his final specifications. . . . That is a notification to the public that the inventor could not work it, or thought it useless. . . . Hyatt's tentative suggestion, still-born and abandoned at birth, unknown, of course, to industry and commerce, lay unnoticed until defenses were sought." Western Glass Co. v. Schmertz Wire-Glass Co., 185 Fed. at 793, 794.

"The Beals patent . . . describes a vegetable wax with camphor in a celluloid mixture which was to be employed in general use, it not being supposed at the date of the invention that the patentee's composition was usable for films; and the experimental test since made to show that films could be produced . . . in the light of subsequent knowledge, is not to be considered anticipate." Goodwin Film and Camera Co. v. Eastman Kodak Co., 207 Fed. at 358.

"It is one thing to conceive the idea that a certain result is possible and quite another thing to demonstrate the possibility . . . convert the possibility into reality.



. . . Gardner evidently did not appreciate the necessity of combining the ingredients in the manner employed by the applicant and makes no mention of mixing . . . 'until . . . syrupy.' . . . That claim . . . should be allowed." In re Haskell, 278 Fed. at 327, 328.

"Parkes, in No. . . . , said that he dissolved guncotton in alcohol. It is sufficient that he said he did, whether he did or not. In No. . . . he said that he distilled alcohol over chloride of calcium, and used as a solvent guncotton. It is sufficient that he said that he did, whether he did it or not." *Spill v. Celluloid Mfg. Co.*, 22 Fed. 97.

" 'Novelty,' says Walker . . . 'is not negated by any prior patent or printed publication, unless the information contained therein is full enough and precise enough to enable any person skilled in the art to which it relates, to perform the process or make the thing covered by the patent sought to be anticipated.' " *General Electric Co. v. Independent Lamp and W. Co.*, 267 Fed. at 834.

"A foreign patent is to be measured as anticipatory, not by what might have been made out of it, but by what is clearly and definitely expressed on it. An American patent is not anticipated by a prior foreign patent, unless the latter exhibits the invention in such full, clear, and exact terms as to enable any person in the art to practice it without the necessity of making experiments. . . . 'The prophetic suggestions in English patents of what can be done, when no one has ever tested by actual and hard experience and under the stress of competition the truth of these suggestions, or the practical difficulties in the way of their accomplishment, or even whether the suggestions are feasible, do not carry conviction of the truth of these frequent and vague statements.' " *Carson v. American Smelting and Refining Co.*, 4 Fed. (2) at 465.

"It appears from the evidence in this case that the composition of matter described in the Newton specification . . . would not have the physical properties of the

compound described in the complainant's specification. . . . It is perfectly plain, from a comparison of the plaintiff's specification, with the specification in the Newton . . . patents, taken in connection with the fact that there is no evidence that under either of those patents a product was ever made having the physical properties of the plaintiff's compound, that these patents do not anticipate the plaintiff's invention." *Jenkins v. Walker*, 1 O. G. 359.

"It is still contended that, conceding the fact to be that no one had made known these particular inventions, yet that, so much was known to men learned in the science or skilled in the art of the subject, it did not involve inventions to devise these ways and means for accomplishing the desired result. As to this it must be said that the subject is one of the most abstruse and subtle of all the practical sciences, and its pursuit involves the exercise of the keenest intelligence and most patient research that gifted men can bestow upon it. We ought, therefore, to be cautious, when a distinct and practical improvement is made in so useful an art, in denying to the author the reward which the law gives to meritorious inventions." *Dayton Fan and M. Co. v. Westinghouse Elec. and Mfg. Co.*, 118 Fed. at 566.

"The contention that the transfer from the electric light art to the electric power art did not involve invention cannot be successfully maintained. . . . The result was new and unexpected. . . . The foremost electrical experts throughout the world had united in the opinion . . . that alternating currents were useless for the transmission of power. . . . 'The apparent simplicity of a new device often leads an inexperienced person to think that it would have occurred to any one familiar with the subject, but the decisive answer is that with dozens, and perhaps hundreds, of others laboring in the same field, it had never occurred to any one before.' " *Westinghouse Electric and Mfg. Co. v. New England Granite Co.*, 103

Fed. at 965, 966, quoting *Potts v. Creager*, 155 U. S. 597, and affirmed 110 Fed. 753.

“The publications relied upon show nothing more than suggestions and speculations of scientific writers, who had never tested the practicability of their suggestions or demonstrated the truth or value of their speculations.” *Jensen v. Keasbey*, 24 Fed. at 144.

“One of defendant’s witnesses stated that he was certain that he could have arrived at the proper solution within three days . . . having nothing but the Ramsden patent before him. But this does not constitute a disclosure according to the rule laid down in *Selectasine Patents Co. et al. v. Prest-O-Graph Co. et al.* (D. C.), 267 Fed. 840, 842, 843: ‘Such vague, indefinite, and ambiguous descriptions and delineations, especially when contained in a foreign patent, are far from sufficient upon which to predict disclosure. The rule is that the reference, to be sufficient upon which to predicate anticipation, must be so clear and definite as to enable any mechanic skilled in the art to reach the patented invention certainly, directly, and without the necessity of any experiment, and this rule is enforced with peculiar strictness when the alleged disclosure is found in a foreign patent or publication.’ . . . ” (quoting *Hoskins Mfg. Co. v. General E. Co.*, 212 Fed. at 429) *Parker Rust Proof Co. v. Ford Motor Co.*, 6 Fed. (2) 653, 654.

“Reference was made to adjudicated cases wherein the disclosure was characterized as ‘hidden,’ or as containing merely ‘the germ of the idea’ found in the later patent, on the strength of which it was ignored. Such observations, however cannot be applied where, as here, the status of the publication is conceded, and the identity of the subject-matter cannot be denied. . . The disclosure in this article is just as plain as . . . the patents in suit.” *Piston Ring Co. v. Bird High C. Ring Co.*, 276 Fed. at 364.

“Mr. Norton is satisfied that Lee must have used a cardboard machine. Perhaps he did; but he said nothing about it. . . . It is surely somewhat ingenuous to ask a . . . court to hold that art already enriched by what an inventor, like Mr. Norton, after ‘much thought’ and much time experimenting upon it has now discovered must have been the undisclosed method. So to hold would be to fail adequately to recognize the skill and ingenuity of the inference.” *Asbestos Shingle, S. and S. Co. v. H. W. Johns-Manville Co.*, 184 Fed. at 625.

“The case falls rather within the rule that prior accidental productions of the same thing, when the character and function were not recognized until the inventor of the later patent, does not effect anticipation. . . . And that anticipation is not disclosed by a drawing which incidentally shows a similar arrangement of parts, where such arrangement is not essential to the first invention and was not designed, adapted and used to perform the function which it performs in the second invention, and where the first patent contains no suggestion of the way in which the result sought is accomplished by the second inventor.” *Munising Paper Co. v. American Sulphite Pulp Co.*, 228 Fed. at 703.

“Hendrie’s soap is not proved . . . to have been known or used in this country, nor is his circular to the trade considered a printed publication or a public work within the meaning of the patent law.” *Parsons v. Colgate*, 15 Fed. at 602.

“The earliest article . . . may be disregarded. . . . It does not purport to describe an apparatus or ever to have been put to any use. . . . The other articles relate to two hatcheries . . . ready to open and do business, but the hatching appears to have been so far only experimental. The subsequent history . . . is not made to appear. . . . Neither in . . . nor in any other is given any definite or specific description . . . do not advance the art.” *Buck-eye Incubator Co. v. Wolf*, 291 Fed. at 257, 258.

“The Zimmer publication must be given effect as an anticipation only to the extent that it actually gave the public information of a process of filtration. It is not competent to read into such a publication information which it does not give, or by expert opinion explain an otherwise uninforming statement by evidence of some apparatus or article not itself competent as an anticipation.” *Loew Filter Co. v. German-American Filter Co.*, 164 Fed. at 860.

“A reading of the decisions of three tribunals of the Patent Office reveals that, in this obscure and highly technical art, they have reached a conclusion adverse to the applicant because, in the light of his disclosures, they are of the view that any one skilled in the art could have taken the various references (no one of which is in itself sufficient) and achieved the result reached by him. While a post mortem diagnosis may be valuable, it will hardly be denied that a timely diagnosis, resulting in the saving of life, is of much greater value. There is the same difference in the relative values of an original or real invention and one of the post mortem sort. The one involves the exercise of creative genius or power; the other mere deductions.” *In re Wescott*, 287 Fed. at 1011.

“It is no anticipation that by a mistaken showing in the figure of a preceding patent, by the error of the draftsman, the structure of the patent appears contrary to the conception of the inventors and the reading of the patent.” *Stead Lens Co. v. Kryptok Co.*, 214 Fed. at 375.

“It is easy now for us to think that we understand the exact construction of the telegraph line of Siemens referred to in those publications. . . . It is easy for us at the present day, to suggest from our knowledge since acquired, what Lieutenant Siemens might have done, and now suggest that his wires were completely covered, along their whole length, with continuous and homogeneous or uniform coatings of gutta percha, yet that information was by no means conveyed to the telegraphic world by



the publications." *Colgate v. Gold and Stock Tel. Co.*, 16 O. G. 583.

" 'Whatever may be the particular circumstances under which the publication takes place, the account published, to be of any effect to support such a defensive, must be an account of a complete and operative invention, capable of being put into practical operation.' . . . Subject to the qualification—which involves a fundamental principle of patent law—that, if the prior publication contains an omission which would ordinarily be supplied by one skilled in the art, the omission will not avail the subsequent patentee." *Chase v. Fillebrown*, 58 Fed. at 377, 378, quoting *Seymour v. Osborne*, 11 Wall. at 555.

"It is impossible . . . to find anything in the plaintiff's patent which was not with equal definiteness and perspicuity described in the printed publication . . . made nineteen years before the patent was granted. It is quite immaterial . . . that the Johnson specification is insufficient to teach a manufacturer how to make the patented corset. . . . Neither it nor the plaintiff's specification exhibits the process of making." *Cohn v. United States Corset Co.*, 93 U. S. at 376, 377.

"The counsel claim, however, that the Perkins 'method is characterized by a new and useful way of applying heat . . . ' . . . and that the Crochet patent had no suggestion of that. . . . The answer to the contention is that . . . the patent does not support them. . . . If it is a virtue resulting from a peculiar application of heat, there is nothing in the record to show that Perkins was aware of it." *United States Repair and G. Co. v. Assyrian Asphalt Co.*, 183 U. S. at 599, 600.

"This omission of one of the ingredients before supposed to be essential would be . . . a patentable subject. The mixture . . . to make the protective paint of Wetterstedt, involved, according to the description in his specification, a complicated and expensive process . . . it required the use of another and different paint as an

auxiliary protective agent, when used as a marine paint." Tarr v. Folsom, 5 O. G. 92.

"The Wetterstedt patent . . . describes a ship's paint to be made of pulverized antimony and pure oxide of copper, in which a protective influence of the antimony upon the copper is incorrectly ascribed to a supposed galvanic action. The antimony of the Wetterstedt paint was not so used that it performed the function of a base retarding the dissolution of the copper by itself dissolving more slowly than the oxide of the copper." Wonson v. Peterson, 13 O. G. 548.

"The driving of holes for subterranean piles, the leaving in the hole of a therewith driven casing or, the withdrawing of the same and the filling of the hole or casing with cement, was a well-understood and successful practice in the art. . . . A study of the patents shows that in process . . . Shuman disclosed nothing novel." MacArthur Concrete etc. Co. v. Simplex C. P. Co., 230 Fed. at 650, 651.

"The prior art of melting glue embraced every feature of the process disclosed. . . . But all prior patents and all elements of the prior art have a bearing upon the question of fact whether there is invention in the process under consideration. . . . And so it is not necessary . . . that every element of the process be found in one embodiment of the prior art." Zimmerman v. Advance Machinery Co., 232 Fed. at 869, 870.

"In some of these patents, the inventors state generally that the compound produced by them may be used upon collars and cuffs and other textile materials. . . . The law requires something beyond mere suggestion to defeat a patent. Prophecy will not do it. Facts not theories are needed." Celluloid Mfg. Co. v. Chrolithion Collar and Cuff Co., 23 Fed. at 398, 399.

"We are unable to see that Adams-Randall's contribution to the art advanced it a single step. His patents abound in tentative, indeterminate and infeasible sugges-

tions too nebulous to anticipate a patent which has actually shown the art how to make the thing needed. In contemplation of law an invention does not exist until the inventor's ideas have been reduced to practical form. . . . The naked assertion that a certain result has been accomplished without stating how, without describing the means which produce the result is insufficient as an anticipation." *American Graphophone Co. v. Leeds and Catlin Co.*, 170 Fed. at 331.

"The Clark and the Taylor patents . . . both disclose means intended to produce barrels of the kind described in applicant's claims. . . . Appellant is not claiming a process for making a barrel—he has a patent for that;—but he is here seeking a patent on the product—the barrel itself. We think it sufficient that the product was clearly described in the Taylor and the Clark patents. The inoperativeness of these patents might be material if we were considering process claims. But that is not this case." *In re Decker*, 162 O. G. 999.

"The claim as now presented is for . . . an article of manufacture, being a compound bar consisting of an inner bar of harder metal and an inclosing bar of softer metal pressed on the same, etc. . . . An inner bar of hard metal and an outer bar of softer metal inclosing or partly inclosing the inner bar, was well known . . . there is nothing new in the expedient of a dovetail as a means of holding one piece of metal to another . . . There is no patentable novelty in the alleged invention." *Bedford v. Duell*, Commissioner of Patents, 87 O. G. 1611.

"The return of the saved particles for subsequent fermentation . . . impresses upon the whole process the character of the novelty. . . . The process . . . patent cannot be invalidated by the prior publications or patents which have been introduced, although they may show that every independent operation of the process except the last, was destitute of novelty, and that competent apparatus adapted to carry out all the mechanical operations

of the process were also well known in the art." *Frankfort Whisky Process Co. v. Mill Creek Distilling Co.*, 37 Fed. at 540.

"The invention was not anticipated. British patent . . . relates to . . . the employment of certain compositions of which none is a solder, although erroneously called such in the patent. . . . Walther does not relate to soft-solder at all. It describes a mixture for brazing which can only be used at a high temperature. . . . The Bormann patent in suit is the first patent to disclose a pasty soft-solder comprising powdered alloy, a vehicle and a flux. It is valid." *Kupper v. Westinghouse E. and Mfg. Co.*, 212 Fed. at 186.

"They only show that for some time some men had cast the eye of hope on tungsten; but neither hope nor prediction is invention. If it be admitted . . . that they show Just reaching the goal of success 'by a neck,' that detracts nothing from his legal right to the victor's palm. . . . Little was accurately known about that not uncommon metal until, Coolidge, so to speak, tamed it." *General Electric Co. v. P. R. Mallory and Co.*, 298 Fed. at 583, 584.

"While there were a number of prior processes of one kind or another showing the spraying or injection of liquids into a chamber or casing, still none of them were shown to be capable of accomplishing the result of the patent in suit. . . . Nowhere is there any suggestion of a powder obtained by spraying, save in the Percy and La Mont patents. . . . The success of complainant's process was owing to the fact that the milk was actually projected or sprayed into the current of heated air, and then borne upward. . . . The Percy patent does not disclose the combination of elements. . . . The La Mont patent . . . is without a drawing, and it is difficult definitely to determine of just what the process consists . . . 'The prophetic suggestions in English patents of what can be done, when no one has ever tested by actual and hard experience and under the stress of competition the truth

of these suggestions, or the practical difficulties in the way of accomplishment, or even whether the suggestions are feasible, do not carry conviction of the truth of these frequent and vague statements." *Merrell-Soule Co. v. Powdered Milk Co.*, 215 Fed. 924, 925, quoting *Westinghouse Air Brake Co. v. Great Northern R. Co.* 88 Fed. 258.

"It is true that there are shown, in a number of ways of the patents of the prior art, finished lenses which might have been made from such a lens as that shown and claimed by Alexander in his third claim; but there is no evidence that they were in fact so made, and . . . there is no evidence that any of them was ever made at all." *One-Piece Bifocal Lens Co. v. Bisight Co.*, 246 Fed. at 459.

"So far as Cheever attains results similar to those of this applicant he does it by the use of bisulphide of carbon, which is lost in the operation. If applicant's simple improvement had been perfectly obvious, Cheever would hardly have gone to the expense of using and losing the bisulphide of carbon. Again, applicant's product is a new thing—nothing like it is cited—a heavy oleaginous fluid of definite utility." *Ex parte Sommer*, 58 O. G. 1255.



## CHAPTER 11

### OF THE NATURE OF A VALID PROCESS CLAIM IN THE PATENT

A patent is incomplete without a "claim," that is a definition of the invention, for the statute says the inventor "shall particularly point out and distinctly claim the part, improvement, or combination which he claims as his invention or discovery." The Statute prescribes no form of claim or other limitation upon it. Many claims have been decided by the Courts to be invalid and many have been decided to be valid. From these decisions many attorneys and Patent Office Examiners have attempted to formulate arbitrary rules for drawing claims, but these rules mainly apply to patents on mechanical inventions, and often are very misleading when applied to chemical inventions.

It is usually well to include in the patent broad claims which omit every unessential step in a process, to bring within the patent those who may find it possible to use equivalents instead of the disclosed form of the invention. To enable this to be done intelligently experimentation is often necessary before the application for the patent is prepared, to enable the results of the experiments to guide in the preparation of the patent specification, and then kept in mind in the drafting of the claims.

In the last ten years both the Courts and Patent Office Examiners have been holding invalid many broad claims based on only one or two examples set forth in the specification. Chapter 12 should also be studied in this connection.

## WHAT THE COURTS HAVE SAID

**I. In General**

"The claim is a statutory requirement, prescribed for the very purpose of making the patentee define precisely what his invention is." *White v. Dunbar*, 119 U. S. at 52.

"The summary of the patentee's claim at the close of the specification . . . implies that all the rest is old, or, if not old that the applicant does not claim it so far as that patent is concerned." *Brown v. Guild (The Corn Planter Patent)*, 23 Wall, at 224.

"The claim is the measure of his right to relief." *McClain v. Ortmyer*, 141 U. S. at 424.

"A process claim is a description of the step by step means by which a particular result is achieved." *Asbestos Shingle, Slate and S. Co. v. Rock Fibre Mfg. Co.*, 217 Fed. at 72.

"The claim must contain an intelligent description of the art which constitutes the step." *Smith Engineering Wks. v. Nordberg Mfg. Co.*, 68 Fed. (2) 494.

"When the claim recites the step of applying dye in amount sufficient for only partial penetration of the fabric by the dye it is stating substantially nothing more than the result desired. . . . The Examiner's rejection of the claim is proper." *Mijur*, 8 U. S. P. Q. 311.

"These claims . . . must all fail, because they produce no results proceeding directly from the operation of the theory or plan laid down in the claims. To be patentable, a method laid down to be followed must produce the desired result from the mere following of the method prescribed." *Johnson v. Duquesne Light Co.*, 29 Fed. (2) 786.

"The two process claims must be declared invalid because (a) the so-called steps are not defined with sufficient particularity to inform the public so as to enable it to avoid infringements; (b) the language does not describe acts which are the life of steps in a process patent. . . ."

Smith Engineering Wks. v. Nordberg Mfg. Co., 68 Fed. (2) 494.

“Insofar as the language above quoted implies that a valid method claim requires that it relate to the treatment of some material, we are not in accord therewith.” Ernst, 71 Fed. (2) 170.

“Claims are independent inventions. One may be infringed, others not. . . . One claim may be valid, all the rest invalid. . . . In such cases the patent does not stand or fall as a unity.” Leeds and C. Co. v. Victor Talking Machine Co., 213 U. S. at 319.

“Each claim is, in effect, a separate and distinct patent.” United Nickel Co. v. Central Pacific R. Co., 36 Fed. at 188.

“A method or feature which is mentioned only by way of recommendation, in describing an invention, must generally be considered . . . not an essential part of the invention, and, in the absence of apt language in the claim, it cannot be read into the claim, even to limit the claim to the real invention of the patentee.” Holliday v. Pickhardt, 29 Fed. at 858.

“The patent contains two claims, the second prescribing ingredients in precise proportions, the first in proportions within given ranges. . . . The patent was valid.” Pittsburgh Iron and Steel F. Co. v. Seaman-Sleeth Co., 248 Fed. at 706.

“The words of the claims are sufficiently explained in the descriptive part of the specification. . . . Claim 1 of the first patent accurately describes the appellant’s process, and claim 2 is the same as claim 1, except that it adds the words “and in the meantime placing the closure under appropriate pressure.” International Cork Co. v. New Process Cork Co., 6 Fed. (2) at 422.

“To heat over a water-bath, or, in other words, to heat at a moderate temperature, is a limitation over the broad act of heating. For this reason I am of the opinion that claims . . . are not substantial duplicates of each

other, and all of them should therefore be allowed to remain in the same application." *Ex parte Ach.*, 96 O. G. 2411.

"In the present case the applicant has not in the claim changed the order in which the steps of the process follow each other, but has merely in one of the claims omitted one step included in another claim. . . . And . . . contends that the omitted step is not essential . . . although it is an improvement. . . . An applicant may properly in one case have claims covering the principal or essential steps of his process and other claims including those steps, together with other specific steps which are not absolutely necessary to the performance of the process, but which add to its efficiency or make its operation more perfect." *Ex parte Oxnard and Baur*, 88 O. G. 1526.

"The question whether a complete process, chemical or mechanical, can be subdivided in an application, and whether when it is so subdivided a claim for one of the subdivisions can be joined with a claim for another or with a claim for the complete process, turns on the question whether such subdivisions constitute sub-processes effecting themselves distinct results subsidiary to the general result of the entire process. . . . An applicant may join in one application a broad or generic claim for a method or process and a specific claim for one of the forms or modifications." *Ex parte McDougall*, 18 O. G. 130, quoting *ex parte Smith*, 16 O. G. 630.

"The rejection is based largely on the matter of office classification, the Examiner pointing out that certain features of the invention are classified in one division of the office while other features or combinations are classified elsewhere. . . . Office classification is not controlling and must give way to the necessity of allowing claims commensurate with an applicant's contribution to the art. . . . The Examiner holds that the claims on appeal cover

an old or exhausted combination. . . . The . . . Examiner is reversed." Newson, 2 U. S. P. Q. 127.

"A process and an apparatus . . . may be completely independent. . . . But they may be related. They may approach each other so nearly it will be difficult to distinguish the process from the function of the apparatus. In such case the apparatus will be the dominant thing. But the dominance may be reversed and the process carry an exclusive right, no matter what apparatus may be devised to perform it." *Steinmetz v. Allen*, 192 U. S. at 559.

"A claim is a definition of that which has been described in the specification. . . . A claim not supported by the specification is a bad claim." *Westinghouse E. and Mfg. Co. v. Metropolitan E. Mfg. Co.*, 290 Fed. at 664.

"It is upon its face, a claim purporting to cover a method but lacking one of the steps, which, in accordance with the statement of invention . . . and the description and drawings upon which the claim is based, is essential to the carrying out of the alleged method. The claim is, accordingly, defective in that it fails to set forth the steps necessary to produce the intended result." *In re Creveling*, 117 O. G. 1167.

"To predicate the claim of Jepson. . . . Upon the . . . present application seems to be impossible without forcing upon the terms of the count a meaning which robbed them of their sense." *Ex parte Creveling*, 247 O. G. 746.

"The patent being for a process should contain a distinct statement of each step, or, at the least, an unambiguous inference of any step that is not distinctly stated. . . . But we do not deem it fair interpretation to take a single expression in a specification and from that determine the color of a claim. Rather should the single expression take its color from the specification as a



whole." *General Subconstruction Co. v. Netcher*, 174 Fed. at 244, 245.

"So here, surely it cannot be said that a process which will not result in the production of suboxide of lead, if such be the fact, is the same invention as a process that will produce it. The production of suboxide of lead is the very heart of each of the counts where the phrase under consideration occurs, and this phrase is necessary 'to give life and meaning and vitality' to the counts, and we are clear that, in determining the question of whether or not the process disclosed by appellant involves the same invention as that disclosed by appellee, this phrase must be considered." *Hall v. Shimadzu*, 13 U. S. P. Q. 261.

"Claims 1, 2 and 3 define the process without reference to any particular materials acted upon. Therefore the argument presented in the brief as to the advantages of the process as applied in the extraction of pyrethrins from pyrethrum flowers is not pertinent to the rejection of these claims. These claims distinguish from the art of record in that the patentees Green et al. do not state how the liquid is allowed to flow through the various baskets in which the malted barley is placed in order to obtain an extract of the malted material and do not indicate whether the material floods the baskets or whether the liquid is controlled in its flow in any particular manner. These rejected claims call for a rate of flow less than sufficient to fill the interstices between the organic substances treated. The examiner contends, and correctly, in our opinion, that the rate of flow should be dependent upon the character of solution desired to be obtained." *Sankowsky*, 19 U. S. P. Q. 176, 177.

"The third claim of the patent . . . distinctly embodies the invention of the patentees, and it has been infringed by the defendants. . . . The defendants have used 'the process of preparing and preserving beer for the market'; by 'holding it under controllable pressure of carbonic acid gas from the beginning of the krausen

stage until such time as it is transferred to kegs and bunged, substantially as described' in the specification of the patent. . . . Enter a decree establishing the validity of the third claim." *New Process Fermentation Co. v. Maus*, 122 U. S. at 432.

"Appellant's contention is to the effect that since he is the first person producing a silver-tin base dental alloy having the characteristics set forth in the claims, he is entitled to all methods (even though claimed only in terms defining the desired result) for producing the same. . . . A proper method claim . . . should do more than merely state a broad conception of the problem. . . . It should specify the necessary step or steps by which the result is accomplished." *Stack*, 32 U. S. P. Q. 252.

"The nomenclaturist should not seek the reward for his labors in the patent-office. A person is not entitled to a patent because he has invented a new word." *Brush Electric Co. v. Electrical Accumulator Co.*, 47 Fed. at 51.

"Not only is the above claim, but all of the three process claims, and the specifications, shot through for column after column, with such meaningless and indefinite statements (when applied to a matter of process requiring certainty and definiteness) as 'consisting in causing molten, metallic alloy in which a eutectic will exist after final freezing,' and 'the walls of which are constituted of metal maintained at a chilling temperature as compared to the temperature of the molten alloy' but the above language is in many other respects wholly obscure and indefinite. A eutectic would exist, as every one knows, because it was there in the beginning in the old alloy used, and it could not be gotten rid of or kept from functioning. . . . It is obvious that no metal can be molded unless it is poured into a mold which chills it, thus causing freezing. There are nowhere in the claims or specifications any certain or definite temperatures given, showing the extent of chilliness. . . . To me it seems so apodeictic as to render exposition unnecessary, that plaintiff may not by the

process described, or omitted so to be, obtain a monopoly over the fairly simple and certainly ancient method of molding metal, and that it may do it largely by the use of recondite terms, which as used are meaningless.” *Aluminum Co. of America v. Sterling Products Corp.*, 18 U. S. P. Q. 163.

“We find nothing whatever in appellant’s specification to indicate that he had any conception of partially condensing the vapor under rectifying conditions at a pressure in excess of 25 atmospheres. If he had any such conception he certainly failed to disclose it. . . . Appellant is not entitled to make claims 21 to 26. Dubb’s specification makes no point about the use of free hydrogen. Rather it only suggests any hydrogenating agent with mild action. Hydrocarbon gases are well known to art as mild hydrogenating agents, but they do so because their hydrogen is combined and not free.” *Dubbs*, 25 U. S. P. Q. 398, 399.

“In appellant’s disclosure the feed oil and condensate pass successively from stills of low temperature to stills of higher temperature, while in appellee’s process the feed oil passes from coils of high temperature to coils of lower temperature, and the condensate passes from coils of low temperature to coils of higher temperature. . . . The count . . . does not read upon appellee’s disclosure.” *Dubbs v. Beatie*, 21 U. S. P. Q. 643.

“The appealed claims were copied by appellant from a patent issued to Clyne. . . . It is perfectly obvious from appellant’s specification that he does not disclose the two-step method. . . . The appealed claims are expressly limited . . . to the so-called two-step method, which appellant does not disclose. Such express limitations may not be ignored.” *Bond*, 25 U. S. P. Q. 357.

“Counsel for Beatie argues that by treating his third still as the first process in the series, or by using his second still as his first process, the process will give the results called for in the count. . . . There is no justifica-

tion for considering the process in this light. The whole disclosure of Beatie should be considered in the light in which it was made, and, when so considered, it calls for an orderly process of successive steps, which is not at all met by a selection of units by which the action is reversed or greatly modified." *Beatie v. Pollock*, 21 U. S. P. Q. 622.

"The patented method consists of a method of placing the fruit in bulk into a retort, extracting the air and gases from the fruit by means of a vacuum and then instantly applying and equally distributing steam thereto. . . . Defendant asks the court to ignore the introductory portion of the claims: 'A method of treating fruit or the like in bulk' . . . because it does not constitute a part of the process. . . . The phrase under consideration is more than an introductory phrase and is absolutely essential to point out the invention. . . . It is part of the process." *National Fruit P. Co. v. C. H. Musselman Co.*, 23 U. S. P. Q. 266.

"We feel compelled to hold that the disclosures of the specification referring only to condensed steam, which is water, do not support claims for the wet steam process and that when wet steam was inserted, it brought new matter into the application." *Kobseff*, 9 U. S. P. Q. 166.

"Causing the material to drop freely under gravity. . . . To what does the word 'cause' refer." *Smith Engineering Wks. v. Nordberg Mfg. Co.*, 68 Fed. (2) 494.

"The burden of proof is upon the defendant to show its invalidity. I am unable to find as a fact that lead suboxide does not exist. The burden has not been met, and the product claims are therefore held valid. On the other hand, the burden is upon the plaintiff to prove infringement. He has not established the fact that suboxide is to be found in the defendant's product and so has failed to meet the burden. I therefore hold that the claims above referred to are not infringed." *Shimadzu v. Electric Storage Battery Co.*, 31 U. S. P. Q. 321, 322.



"The examiner has allowed a claim to the mixture . . . but holds process claim 9 unpatentable over the allowed claim. While it may be true that there is no particular patentable distinction . . . claim 9 is in different form and in possible future litigation may be regarded as more properly defining the invention. . . . This claim should be allowed." *Hannach*, 8 U. S. P. Q. 13.

"Patentee was most unfortunate in wording his claim . . . we find it to be a hybrid. It begins as a process and ends like a product claim. . . . It may result in narrowing the claim, but we think it unfair to give it a construction which would result in its instant annihilation." *Therm-O-Proof Insulation Co. v. Slayter & Co.*, 28 U. S. P. Q. 98, 99.

"If it may be said that the claim of the patent in question covers any composite design where the different characters forming the same are so arranged as to produce an effect which will be free from lanes or aisles which would separate the characters or groups of characters so as to avoid a patterned effect, it is apparent that there would be no limit to the number of designs which might be devised within such prescribed limitations. This would also be true with a varied coloring of the characters. . . . The effect of the decree is a determination that the patent No. 1,625,690 not only covers a process for ornamenting awning material but any composite design therefor of various characters and colors so arranged as to be free from lanes or aisles, and thus avoiding a patterned effect. This, if valid, would be a multiple design patent. Our attention has not been called to any decision holding such a multiple design patent to be within the purview of the statute." *Waldman v. Swanfeldt*, 18 U. S. P. Q. 185.

"Claim No. 12 is as follows. . . . This comes nearer being a process claim but whether it is or not defendant infringes it." *Eibel Process Co. v. Minnesota and Ontario Paper Co.*, 261 U. S. at 70.



“The claim is, first, for the process, and, second, for the apparatus. It is to be read, (1) as a claim for ‘the method of transmitting vocal or other sound telegraphically . . . ’ and (2) as for ‘the apparatus for transmitting vocal or other sounds telegraphically . . . ’ Good.” Telephone Cases, 126 U. S. at 537.

“The third claim is a double claim for the combination of machinery, and also for the process . . . the part of the third claim which is for a process is valid.” New York Grape S. Co. v. Buffalo Grape S. Co. 18 Fed. at 641.

“The claim . . . is in these words . . . ‘the use of the hereinbefore specified new group of active liquid solvents or converting agents . . . ’ . . . The patent exhibits on its face an art or process.” Celluloid Mfg. Co. v. Frederick Crane Chemical Co., 36 Fed. at 110, 111, 113.

“The examiner holds that assembly of such steps alone represents no useful method and is incomplete with respect to applicant’s actual method. . . . Applicant contends that such claims should be allowable as subcombination claims. Applicant appears to be unable to state any object or utility known at present for such series of steps but it appears to be his opinion that he should be entitled to cover such field in case any subsequent development should furnish any ground of utility for such procedure. It is our opinion that the examiner’s view is correct.” Podbielniak, 26 U. S. P. Q. 281.

“The claims of the process patent in suit are:

‘7. The hereinbefore-described process of making . . . gas; which consists in conducting . . . regulating the proportion . . . and regulating the amount of such mixture of air and carbon dioxide so as to avoid objectionable slagging of the fuel and conducting . . . ’

Of claim 7 Mr. Benjamin says:

‘This claim states the obvious. It is unreasonable to assume that any furnace manager would operate his producers so that large quantities of slag, objectionable quantities, would be produced.’

But the preponderance of evidence is to the effect that furnaces were so operated. . . . What we are concerned with is the difference between what Doherty did and what was done by prior inventors. . . . I find claims 7 . . . valid." *Combustion Utilities Corp. v. Worcester Gas-light Co.*, 190 Fed. at 156, 159, 161, 164.

"Both patents . . . point out that albumen is to be uncoagulated, and that, when coagulated after it is interposed between the disk and the shell, the application of heat will set the albumen or produce adhesion. The degree of heat to be applied is sufficiently referred to. . . . The words of the claims are sufficiently explained in the descriptive part of the specification." *International Cork Co. v. New Process Cork Co.*, 6 Fed. (2) at 422.

"In actual experience, persons skilled in the art have not found these disclosures so indefinite as to make the apparatus inoperative without undue experimentation and change. The method claims should not be condemned, even if they recognize a temperature too high, since persons of ordinary skill can detect the consequences thereof and still practice the method and operate the apparatus." *Buckeye Incubator Co. v. Wolf*, 291 Fed. at 261, 262.

"Here the word 'manufacture' is used in the sense of the word 'process,' a word which could be substituted for it without a shade of change in the meaning. . . . The developed and improved condition of the patent law, . . . leave no excuse for ambiguous language or vague descriptions. . . . Nothing can be more just and fair both to the patentee and the public, than the former should understand and correctly describe just what he has invented, and for what he claims a patent. . . . We are of opinion that the appellant in this case has described and claimed a patent for the process of deodorizing the heavy hydrocarbon oils, and that he has not claimed as his invention the product of that process." *Merrill v. Yeomans*, 94 U. S. 572, 573, 574.

"His claim on this application is understood to be for the process, and that the invention includes that as well as the product. Doubtless both may be covered by one patent . . . but . . . claims should disclose that the inventor had both results in his mind." *Welling v. Rubber-Coated H. T. Co.*, 7 O. G. 608.

"The technical form of the claim . . . is . . . for the use (generally) of nitro-glycerine as an exploding agent. . . . According to our view . . . the patent is for those processes and methods as applied to the use of nitro-glycerine, or its equivalent, as an explosive agent." *Giant Powder Co. v. California Powder Wks.*, 98 U. S. at 135.

"The patent is for a 'method of working button holes.' . . . This is clearly a patent for a method or process." *Ferris v. Batcheller*, 70 Fed. at 715.

"The improvement is expressly stated to be 'in the manufacture of coloring matters' . . . it . . . is . . . a claim for a process. . . . Product and process are quite distinct matters, even where both are created by the same inventive act." *Durand v. Green*, 60 Fed. at 395, 396.

"The contention of the complainant is this: Cameron introduced the word 'septic' into the art . . . and . . . the septic tank of these claims is the septic tank in which the septic scum and deposit are found, . . . equilibrium . . . is established . . . and . . . action of anaerobic bacteria . . . is sufficiently novel to uphold the combination. . . . The apparatus claims were never . . . intended to cover any tank other than that which Cameron's human workman built." *Cameron Septic Tank Co. v. Village of Saratoga Springs*, 159 Fed. at 463.

"Claims 15, 16, 17, 19 and 21 use the term 'fermenting' instead of 'inoculating' and the examiner objects to these claims on the ground that applicants do not ferment the mash; they prepare the mash, isolate the bacteria, inoculate the mash therewith and maintain the temperature constant. The fermentation is the act of the bacteria and this is an inherent function of the bacteria, a power

given it by nature. He holds that claim 15 is not a claim for a process in which the power of the bacteria to ferment material is made of but a claim for the power, the fermentation itself. . . . If the rejected claims are unpatentable it is not because they do not cover patentable subject matter but because they involve nothing inventive over what was known by others prior to appellants' invention." Prescott and Morikawa, 19 U. S. P. Q. 179, 180.

"The discovery that such a compound body was a solvent does not justify the conclusion that each constituent of that body is a solvent. . . . The testimony . . . disclosed that Seher never made the discovery or discoveries set forth and claimed in his patent." *Stevens v. Seher*, 81 O. G. 1932.

"The British patent to Gardner . . . about twenty-two years before . . . evidently did not appreciate the necessity of combining . . . and . . . of mixing such materials 'until the mass becomes of a homogeneous syrupy consistency.' This is important and goes far toward demonstrating that applicant . . . is the originator of the subject-matter of the claim." *In re Haskell*, 298 O. G. 1082.

"Claims 6 and 8 of the patent in suit do not, in my opinion, constitute a true method. There is a wide distinction between a tool and a method, but claims 6 and 8 appear to be built up around the specific strip, the tool, and the only 'act or series of acts' referred to in claims 6 and 8 are two—cutting the underbed while in a wet condition, and placing the material on top of the underbed when the underbed has set. The provision, 'said strips being inserted so that their upper edges will be substantially level with and will divide the surface of the completed terrazzo flooring,' found in both claims 6 and 8, describes the product, the flooring . . . and not a step in a method." *Del Turco v. Traitel Marble Co.*, 25 Fed. (2) 311.

"The word 'small,' it seems to me, may properly be understood as commonly used. The word small is rela-

tive. . . . A patentee has the right to use such words as to him best describe his invention, and they will be so construed as to effectuate that result." *H. J. Wheeler Salvage Co. v. Rinelli and Guardino*, 295 Fed. at 726.

"Claims . . . for a device and process for finishing concrete pavements by rolling same when fresh and plastic with a roller . . . adapted to float. . . . The vital thing is that the roller is 'adapted to float.' . . . I see no practical point in seeking to invalidate the claim for the method. . . . Claims . . . are held valid." *Macon Concrete Roller Co. v. Brooks-Callaway Co.*, 272 Fed. at 342, 345.

"We have selected claim 11 as the basis and suggest that it be changed to read as follows: The process of preserving food comprising cooking the food until it is ready for consumption, placing it in a container and entirely covering it with saturated, hot, liquid edible fat having a melting point in excess of 115° F., hermetically sealing the container and preventing the penetration of the fat into the food by sudden cooling." *Strasburger*, 22 U. S. P. Q. 366.

"Claim 12 should be allowed, upon the theory that, claim 4 being patentable, appellant has the right to add to it a limitation described in his specification." *Laursen*, 24 U. S. P. Q. 17.

"Where the device thus has two possibilities, one in which it would be clearly operative and the other in which it could be rendered inoperative under certain conditions, it is regarded as clear that the claims for the device should not be rejected as inoperative." *Ricker*, 25 U. S. P. Q., 296.

"Appellant feeds his cable without causing it to be subjected to such forces as to produce distortion. . . . The distinction is set forth in claim 7 by way of negative limitation. We suggest amendment of this claim by substituting for 'without subjecting it to any force great



enough to,' the words 'and under forces insufficient to.' ”  
Elmen, 2 U. S. P. Q. 211.

“If there is no known sub-generic term, it is not seen why any applicant may not employ a generic term limited by explanatory terms. . . . Where the validity of the claim is not involved, the paucity of the language may necessitate a waiver of technical rules of this Office. . . . An applicant should be entitled to adequately cover his invention and not be forced to rely upon the doctrine of equivalents for his proper protection.” *Ex parte Markush*, 340 O. G. 839.

“Now reading the first claim . . . we cannot doubt that the claim is for the instrument or device denominated a floating coffer-dam. . . . ‘Having,’ said he ‘described one mode of carrying out my invention, what I claim . . . is: 1, building and setting piers by means of a floating coffer-dam. . . .’ . . . It is evident the first claim was for the caisson or coffer-dam. . . . The setting of a pier by means of a floating dam is . . . part of the process of building. The building consists in laying the masonry of the pier, . . . causing it to descend by its own gravity towards the bottom until it reaches the foundation. This descent is the setting. The floating coffer . . . was well described as a means of building and setting piers.” *Philadelphia W. and B. Railroad Co. v. Dubois*, 12 Wall. at 61, 62.

“In as much as no description is given of the process claimed, except that part of it which consists ‘in removing . . . as it forms . . .’ it must be presumed that all else was well known to those skilled in the art, and therefore did not need description. . . . The patentee . . . by amending . . . admitted that this feature of novelty was not of itself sufficient.” *Farrel v. United Verde Copper Co.*, 121 Fed. at 554, 555.

“The only advance on the prior art involved in the claim consists in the object sought to be attained. No device is suggested. It is simply an attempt to appropri-

ate the main and shunt circuits . . . in varying pressure vacuum tubes. All that he adds to the prior art is a function. . . . In the language of *Carleton v. Bokee*, 17 Wall. 463, he is making 'ingenious attempts to expand a simple invention of a distinct device into an all-embracing claim, calculated by its wide generalizations and ambiguous language to discourage further invention in the same department of industry, and to cover antecedent inventions.' This he cannot do." *Queen and Co. v. R. Friedlander and Co.*, 149 Fed. at 777.

"Having discovered a new and useful method . . . a machine patent was applied for and issued upon an unpatentable device. This was an error in judgment and administration for which the courts cannot and should not afford a remedy." *Nestle-LeMur Co. v. Eugene*, 55 Fed. (2) 858.

## II. Apparatus Limitations in Method Claims

"The process of claim 23 distinguishes from the process defined by claim 22 . . . by the inclusion of structural features not properly present in a process claim. A claim of this type should state something different than the mere operating function or characteristic of the apparatus." *Mason*, 32 U. S. P. Q. 406.

"Claims . . . were found objectionable on the ground that they are in form method claims which contain recitations of structural limitations. . . . Patentable novelty of method claims can not be based on positive recitations of structural limitations included therein." *Ex parte Foreman*, 326 O. G. 684.

"It may be observed . . . that the limitations involving this new matter are really limitations relating to the apparatus and have no proper place in a process claim." *Ex parte Dixon*, 123 O. G. 653.

"Claims 3 and 7 stand rejected on the ground that they contain structural limitations. While these claims involve

the use of apparatus they are in no way restricted to the use of appellant's particular apparatus and we think, therefore, that they define proper processes." *Graham*, 16 U. S. P. Q. 9.

"Claim 15 is carefully limited to a rapid brine flow over one side of a heat exchanging surface constructed in such a way as to cause entrainment of the liquid with the gas in a restricted passage having a rising gradient, and a consequent rapid flow over such heat exchanging surface, and that is essentially what Shipley invented. A method is patentable even though it involves mechanical steps." *York Ice Mach. Corp. v. L. & K. Ice Corp.*, 21 U. S. P. Q. 612.

"While it is true the claims on appeal include structural elements, this is not necessarily an objection in method claims." *Barrett*, 26 U. S. P. Q. 151.

"The claims sought to be patented are . . . : '1. The described method of manufacturing a symmetrical movable coil for an electrical measuring instrument, consisting in first forming a supporting frame or spool by subjecting a short tube of metal to pressure until the desired conformation and shape is obtained, then winding the coil thereon and finally securing the pivot-pins thereto in the axial line of the coil.' . . . Claims numbered 1 . . . are patentable." *In re Weston*, 94 O. G. 1786.

### III. Methods Distinguished from Functions

"Claim 4 defines the ink in functional terms, but the claim is directed not to an ink but to a method of producing a marked stuffed sausage. . . . We do not believe the rejection on the ground of functionality can be sustained." *Freund*, 21 U. S. P. Q. 528.

"Claims 8 and 9 are also invalid because they define merely the function or result of the machine. Claim 8, if valid, would preclude everyone except appellant from producing round cases by breaking the grain of metal

blanks from which they are formed.” *Continental Can Co. v. Cameron Can Mach. Co.*, 25 U. S. P. Q. 53.

“This application relates to a process of electroplating the interior of a tube. . . . The examiner has rejected the claims as not patentable over . . . apparatus claims . . . allowed. He holds that the claims are for functions or the use of the apparatus. We find nothing in the claims that limits them to any particular apparatus. . . . An applicant should be allowed some latitude in the manner of claiming his invention and at times the process form of claim may be more satisfactory than the apparatus claim. Where an applicant has not unduly multiplied the claims we do not consider the practice objectionable.” *Fahrenwald*, 3 U. S. P. Q. 191, 192.

“No step of any of the process claims was new nor was there novelty in the order or the number of said steps nor in the product that results therefrom. The steps were individually and collectively the acts—that is, the operations of the machine, and as described were limited to the machine covered by the patent. Under such circumstances there is no valid basis for support of the process patent.” *Interstate Folding Box Co. v. Empire Box Corp.*, 20 U. S. P. Q. 119.

“Dickinson’s claim here sued on is as follows: ‘A candy-pulling machine comprising a plurality of oppositely disposed candy hooks or supports, a candy puller, and means for producing a specified relative in-and-out motion of those parts for the purpose set forth.’ . . . The Dickinson is a generic patent.” *Hildreth v. Mastoras*, 257 U. S. at 32, reversing *Hildreth v. Lauer and Suter, Co.*, 204 Fed. 792 which held the claim functional.

“The apparatus patent specifies, and in fact claims, the function of the apparatus as the simultaneous drying, creasing, and finishing of the textile article mounted on the exterior thereof. It is impossible . . . to perceive how this process can be considered in any other light than the mere function of the apparatus. . . . We . . .

refer to *Busch v. Jones*, 184 U. S. . . . on page 607. . . . In the case at bar, the dependence is the process upon the apparatus, and not the apparatus upon the process, just as the process in that case was dependent upon the press. . . . The claims . . . are invalid." *Paramount Hosiery F. D. Co. v. Moorhead Knitting Co.*, 260 Fed. at 846.

"It is competent . . . for an inventor in describing a machine . . . to make a claim for a process which his patented device is capable of carrying out. But to entitle him to do this the process must be one capable of being carried out by other means than by the operation of his patented machine, and, unless such other means are known or within the reach of ordinary skill and judgment, the patentee is bound to point them out." *American Lava Co. v. Steward*, 155 Fed. at 738.

"Counsel argue that . . . the patented process cannot be used without the patented apparatus, nor the patented apparatus without the patented process, and from the fact they deduce the conclusion that they are for the same invention. . . . If one discovers an art or process, and invents a machine to practice it, does he deprive himself of his right to a patent for his process by securing a patent for his machine? The statute answers this question in the negative. . . . As Congress made no such exception, the courts may not do so. . . . Moreover, it is as probable that an apparatus will be invented which is not the mechanical equivalent of that patented, by means of which the patented process may be practiced as it was before the event that the patented process would be discovered and the patented machine invented." *Century Electric Co. v. Westinghouse E. and Mfg. Co.*, 191 Fed. at 359, 360.

"It would have been possible for appellants to have drawn apparatus claims broad enough to cover all forms of automatic apparatus which would function in accordance with their principle. . . . It is not reasonable to encumber the patent with method claims which may be



regarded by the courts as merely for the function of the apparatus." Bickel, 30 U. S. P. Q. 326.

#### **IV. Broad Claims Need Broad Foundations in Specifications**

"Except in the chemical art and such related arts as involve the properties of materials, it has not been customary to restrict an applicant in his claims to the actual scope of his disclosure. In mechanical cases, generic claims are frequently predicated on a species disclosure." Schmidt, 21 U. S. P. Q. 178.

"The rejection is based entirely on the principle that in chemical cases it is not permissible to allow broad claims covering a large field of chemicals or materials, when applicant has disclosed only one example or a very limited part of the field. . . . The action of materials in a chemical way cannot be foretold except in cases of limited and well established definite and usually small groups of compounds, classified together because of common or analogous properties and actions. But even here there is often doubt whether one agent of any particular class will act in the same way as another in a particular situation. . . . If one inventor, upon the discovery that one chemical compound accomplishes a certain result, is given a claim covering the entire field of chemical agents for accomplishing that result, that it would dominate any further discoveries of more efficient compounds and hence discourage research instead of stimulating it. The reason for denying a claim of this kind seems analogous to that for not allowing a claim for the exclusive use of a principle of nature which is a well-established rule of the Supreme Court.

"There are at least two ways in which such broad claim for a chemical compound or material may be worded. One is to designate the material by the results accomplished, a kind of functional definition of it. The other

is by the use of chemical radicals or words indicating broad classes of compounds which have been grouped as having some property in common. But that common property may, however, not be of assistance in determining equivalency in the particular case in question, even though it may reasonably define a definite class of chemical compounds. . . .

“Distinction must be made in the terms used as to whether they accurately define a definite class of material so that the scope of the claim can be ascertained on the one hand or whether the question is one of exceeding in scope the actual invention and disclosure made in the case. The first of the above questions is one of chemical nomenclature and definition of chemical classes and materials. The second may involve information concerning the chemical equivalency of materials under given conditions. . . .

“Two tests may be applied in determining the scope of claims that may be allowed as based on a given disclosure, in order that an applicant may secure fair protection for what he has invented in reference to equivalents and at the same time not exceed his rights and cover wide fields of invention which he has not explored and thereby something to which he is not reasonably entitled. The first test is that of chemical classification of the material of reagent involved. If an applicant names one of a well established class of chemical compounds and the reaction involved is one of the characteristics of that class of compounds, it is believed that his claims may be of such scope as to include members of that class even though he may have named but one of them. This may be considered as no more than obvious chemical equivalency and a scope of claim necessary to protect the inventor from infringers who could otherwise see on inspection of the question that any of the members of that class would no doubt act as well as the particular one named in the specification. This first rule applies only to compounds or materials

falling in a very clearly defined and established class and where the reaction involved is characteristic and recognizable by those skilled in chemistry. The second test applies where the class and reaction are not so clearly defined and involved. In such case it is required that applicant give a number of examples of compounds which he has found to be operative in the relation involved in his invention. If these several tested materials appear to have some characteristic in common which is the essential characteristic which makes them operative in the relation involved so that it may be expected that other members of that class of materials would act the same, he may have a claim broad enough to include that class. This may involve a classification not previously established, and require the origination of some special descriptive terms. . . .

“It is found that applicant discloses sulphuric acid, sulphonic acid and sulphonyl chlorides or mixtures thereof and proposes the classification of them for his purpose as compounds having in common the  $\text{SO}_2$  radical. The specification of this case refers to the record of his application Serial No. 686202, filed Jan. 14, 1924, and No. 616178, filed Jan. 31, 1923, with the statement that it has been found that those reagents are suitable for use in this process.

“We believe that applicant is entitled to the examples named in those cases for scope of disclosure in this. In case No. 686202 is found a disclosure of about 10 compounds which come within the terms of the descriptive formula  $\text{R-SO}_2\text{-X}$  and in application No. 616178 are about five more. These together with the four broad examples named in this case make about 20 examples in the record. The examiner objects that only one example of the alkyl hydrocarbons is given. This is correct but we believe that where the  $\text{SO}_2$  radical seems to be the active part of the compound that the 20 examples given should be considered sufficient and that it is not necessary to illustrate

further what appears to be an unessential portion of the compound." Geer et al., 3 U. S. P. Q. pp. 131, 132, 133.

"The examiner has rejected the claims as too broad as to 'aryl' as used for stating the final products or reactants. . . . We do not approve such a rejection unless there be some positive evidence that some definite compounds in certain classes claimed will not work in the process. Applicants have given a great number of instances of their process and we know of no authority for the position that they must disclose every member of the class claimed. We believe the disclosure made is sufficient to make known to any chemist the scope of the invention and we do not believe that the claims extend the scope of the invention beyond what is disclosed. The aryl radical is not concerned in the reaction as we understand it and we see no reason to limit applicants to benzene and naphthalene derivatives." Coffey, 35 U. S. P. Q. 101, 102.

"The applicant contends, in effect that the several elements enumerated in the group are equivalents in the applicant's catalyst when used in the relation claimed; that there is no known generic term under which they may be included; that the catalyst in such relation is admittedly new; and that said elements may be properly included in each of the claims under the practice outlined in *Ex Parte Markush*, 340 O. G. 839, 1925 C. D. 126. . . . While the exact situation herein was not present in the *Markush* case, yet it is believed that the principle applied in said case is applicable herein. Metallic oxides may or may not in a given instance, form a recognized group of related substances. The applicant, however, has stated what metallic oxides will work in his process, and has thus made them equivalents and a related group in said process. . . . So far as appears from the record, the applicant's disclosures are confined to the manufacture of oxygenated hydrocarbons from carbon oxides and hydrogen by passing a gaseous mixture containing carbon monoxide and hydrocarbon over his specific catalyst while in a

heated state. There is nothing of record to show that the applicant's specific catalyst when employed in accordance with his described process, would effect all gaseous phase reactions, as pointed out by the Examiner, and yet claims 1 and 2 are broad enough to include not only the specific gaseous phase reactions disclosed, but all others. The public should not be required to invent or to resort to experimentation in order to apply the applicant's catalyst in effecting gaseous phase reactions other than those disclosed. The claims should be no broader than the disclosures." Larson, 15 U. S. P. Q. 68, 69.

"An appeal from the decision of the examiner finally rejecting claim 5 which is as follows: '5. A process of preparing lubricants which comprises distilling a residuum from cracking of petroleum, segregating cuts of the distillate and blending with another oil.' . . . The first criticism raised by the examiner is that the claim is not limited to the use as a starting material in applicant's process of a residuum from cracking of petroleum by pressure distillation. The claim is silent as to the degree of pressure employed in the previous cracking process. It is believed the specification is equally broad since it refers to pressure distillation as an example of cracking processes from which the residuum is obtained. The examiner further criticizes the claim because it omits the sulphur treatment included as a step in the more specific claims. The specification states that this treatment is employed in some cases for special uses. Claim 5 is one of the original claims and is no broader in terms or substance than the original description. . . . The decision of the examiner is reversed." Becker, 10 U. S. P. Q. 19.

"The Examiner has also rejected the claims as too broad in the use of the term 'active decolorizing agent.' In his specification appellant refers to the use of activated clays preferably 'Filtrol,' and also decolorizing carbon. The Examiner admits that possibly other de-



colorizing agents would work, and has mentioned none that is inoperative. This rejection, under these circumstances, is not thought to be tenable." Belden, 17 U. S. P. Q. 472, 473. Compare Phair, 7 U. S. P. Q. 32, 33, 34.

"The specification suggests that various organic and inorganic salts of copper or cobalt are suitable for appellant's purpose and mentions several examples which presumably have been tested. These tests show that there are numerous equivalents and under the circumstances the protection granted ought not to be so restricted as to deprive appellant of the benefit of equivalents. . . . In our opinion a sufficient range of equivalents is disclosed to warrant generic protection." Kurtz, 15 U. S. P. Q. 149.

"It is our opinion that none of the references anticipates appellants' manner of condensing the dry powder to a dry condition by the use of the two liquids having different wetting properties for the powder. . . . This would appear to indicate that the simultaneous treatment of the powder with the two liquids is not practical. In any event there is no disclosure of any way of carrying out the process by the simultaneous use of the liquids and we consider that appellants' process claims should be restricted to the successive treatment." Wiegand, 15 U. S. P. Q. 285.

"The method of fusing metals which comprises maintaining an arc, supplying a non-oxidizing gaseous medium comprising hydrogen to said arc to produce a flame containing atomic hydrogen and subjecting the metals to be used to the action of said flame. . . . The particular point at issue is that relating to the change of a particular chemical, to wit, hydrogen, from a molecular state or form to an atomic state or form. The specification discloses no other chemical than hydrogen. The principle that an inventor is entitled to protection against others who make use of his invention with means different from his own is, generally speaking, sound and is supported by the authorities cited, but this principle, like practically all other

general rules of patent law, has limitations, and the cases of *In re Dosselman*, 37 App. D. C. 211, *Union Switch & Signal Co. v. Kodel Electric & Mfg. Co.*, 55 F. (2) 173, and *In re Marshall*, 19 C. C. P. A. (Patents) 832, 54 F. (2) 421, with their respective citations, support the contention of the Solicitor for the Patent Office that the rule 'does not apply in chemical cases and cases where the properties of materials are concerned.' " *Laugmuir*, 15 U. S. P. Q. 311, 313.

"The Examiner has cited no art and the claims are rejected on the ground that they are indefinite. . . . Appellant is the first one to produce malleability in cast iron at the relatively low temperatures employed by him. . . . The Examiner holds that the claims should specifically include the time of treatment. Appellant points out that even the limits given by him are not necessary. . . . In our opinion, in the absence of pertinent art, it is unnecessary for the time limitation to be included in the claims in order to properly define his invention. The Examiner also holds that the quenching of the iron prior to the treatment for producing the malleability should be included. Apparently the quenching is not necessarily a part of the process. . . . Claims . . . have also been rejected as including only one temperature limit. . . . As long as the treatment is at an elevated temperature, not in excess of 165 degrees C., we consider the claims sufficiently definite." *Valentine*, 3 U. S. P. Q. 208.

"The Examiner has also rejected claims . . . as being too broad and indefinite because not sufficient examples have been given of elements which are adapted to accelerate nitrogenization and elements adapted to cause precipitation hardening. The description refers to a number of elements and also states that similar elements may be used. . . . The expressions referred to are not too broad." *Fry*, 21 U. S. P. Q. 26.

"It, not only, was necessary to recognize a defect in the existing processes but to discover a cure for the defect,

and having discovered the cure to look for possible reagents to act as crystallization retarding agents. The Examiner has cited no references and has allowed a number of claims. It is his contention that the present claims are too broadly expressed in that the term, 'crystallization retarding agent' would introduce not only the specific materials which are enumerated but also any others which may be hereafter discovered. The Examiner also points out that there is no known class of 'crystallization retarding agents' suitable for use with magnesium compounds and that as such class does not exist, only those claims are patentable which are limited to appellant's disclosure. A number of claims have been allowed which recite a specific crystallization retarding reagent and other claims have been allowed which recite a substance which may be selected from a group consisting of a list of reagents specified in the present specification. The question then arises whether appellant having enumerated a number of different reagents which are satisfactory as crystallization retardants should be refused claims which call broadly for a crystallization retarding agent. We believe that in the present instance such claims should be allowed and that the use of the broad term is warranted in view of the disclosure in the specification." Greider, 17 U. S. P. Q. 73.

"The claims . . . describe the hardening atmosphere only as having an oxidizing effect less than that of atmospheric oxygen. . . . Thus the patent left the result to be determined empirically; and while this did not make the disclosure inadequate, it may, and does, have an important effect upon the issue of novelty." Gillette Safety R. Co. v. Triangle Mech. Lab. Corp., 32 U. S. P. Q. 532.

"The appellant has so broadened the meaning of the word slicing, as used in his specification, by his amendment, that his rejected claims read on the prior art." McKee, 24 U. S. P. Q. 415.

“If applicant pursues his investigations far enough to be able to say that he has tested a reasonable number of the members of a chemical class or group and finds that they act in the same way he may be entitled to a claim of such scope as to cover that class.” Weber, 2 U. S. P. Q. 188, quoting Chipman, 380 O. G., 751, which quotes *Corona Cord Tire Co. v. Dovan Chemical Corp.*, 276 U. S. 358.

“Applicant desires to use a gas which is inert with respect to the tar and in order to have it at a proper elevated temperature it is passed into the tar distillation chamber directly from the chamber in which the gas is generated. Applicant points out clearly in his brief reasons for the arrangement of the parts in his system so as to obtain the result he desires. We believe that since merely the physical heating effect of the gases is made use of applicant is not broadening his claims beyond his disclosure by referring to the use of ‘inert gases’ and not limiting his claims with reference to the use of any particular inert gas.” Miller, 18 U. S. P. Q. 217, 218.

“The examiner . . . states: It appears to be clear that these claims are too broad because appellants are not entitled to lay claim to all the sulphates, nitrates, phosphates, etc., and founded on the examples disclosed. . . . Appellants state that their claims do not cover all sulphates, nitrates, phosphates, etc., but only those that are highly soluble and. . . . In the case of *In re Dosselman and Neymann*, 1911 C. D. 379, where the applicant disclosed only one substance . . . this was not sufficient to warrant broad claims. In the case of *In re Ellis*, 1911 C. D. 374, where some fifteen or twenty substances were named in the specification as suitable, the same Court held the appellant entitled to broad claims. . . . In the present case, appellants have mentioned specifically six substances. We think appellant’s case falls within the latter decision.” Muller, 25 U. S. P. Q. 442.

“The Examiner says that claim 14 is either broader than the disclosure or indefinite. The claim does not spe-

cifically identify the bacteria used but attempts to define it by reference to the source from which it is obtained and by the fact that it is capable of producing the desired result. There may be other bacteria obtainable from this source which would produce the result and so far as is known from appellants' disclosure the bacteria technicus is the only one which they or anyone else has discovered. There is nothing generic in the invention as disclosed, and appellant's invention is confined to the use of the specific bacteria which they have discovered. The Examiner points out that there are ways known to bacteriologists of identifying bacteria but the claim does not use them for this purpose. We therefore think that claim 14 is open to the objection raised by the Examiner." Prescott and Morikawa, 19 U. S. P. Q. 181.

"It is pointed out by the Examiner that it would appear necessary that both the precipitating agent and the vapor should be non-solvents of the cellulose ester. He holds that the process otherwise would be inoperative. It is our opinion that the several examples given in the quoted paragraph are sufficient to support a broad claim in this respect unless it should appear that the materials named are, according to some authority or principle, inoperative in the particular relation. . . . Claims 1 . . . stand finally rejected as being too broad in regard to materials which might be used in place of sulphur dioxide. . . . The situation here presented is one which falls within the well established rule that in chemical and physico-chemical relations an applicant is not, as a matter of course, permitted to claim all of the reagents which may come within the range of some broad conception unless he names a reasonable number of examples under the circumstances of the particular case. Applicant names only one example. This clearly is not sufficient." Mason, 20 U. S. P. Q. 289, 290.



## CHAPTER 12

### OF THE NATURE OF A VALID COMPOSITION OF MATTER OR MANUFACTURE CLAIM

In preparing a patent application covering a new process it is wise to consider the possibility of drawing a product claim or claims. A product claim identifying the product by characteristics or tests independent of the process of producing it forms a basis for an infringement suit which avoids many of the difficulties besetting a suit upon a process claim.

In the first place infringement is usually easily proved by mere purchase of the product. In the second place, suit may be brought whenever the product is made, sold, or used. In the third place, it is generally easier to prove facts relating to the infringement. In the fourth place, the Judge, before whom the suit is tried, has a concrete, tangible object before him, usually capable of being brought into court and demonstrated, and, in any event, more certain of comprehension than an intangible conception like a process.

It is important, therefore, to study what the Courts have said about claims to compositions of matter and to manufacturers. Such are often essentially product claims. It is suggested that Chapter 11 be also studied in connection with the problems arising out of broad claims.

#### WHAT THE COURTS HAVE SAID

##### I. In General

“There is nothing improper . . . in first putting your claims as broadly as in good faith you can, and then . . .

following them successively with narrower claims designed to protect you against possible anticipations of which you are not yet aware." *Parke-Davis and Co. v. H. K. Mulford Co.*, 189 Fed. at 102.

"Every patent for a product or composition of matter must identify it so that it can be recognized aside from the description of the process for making it, or else nothing can be held to infringe the patent which is not made by that process." *Cochrane v. Badische Anilin and Soda Fabrik*, 111 U. S. at 311, quoted and followed in *Holliday v. Pickhardt*, 29 Fed. at 860, and *Badische Anilin and Soda Fabrik v. Kalle*, 94 Fed. at 171.

"One and the same patent may cover both a process and the product, but, if the patentee choose to restrict himself to one by his claim he cannot include the other also by a reference to other parts of his specification." *Durand v. Schulze*, 61 Fed. at 819.

"The rules by which product claims are to be judged . . . are briefly summarized . . . in the case of *George K. Hale Mfg. Co. v. Haffleigh & Co.*, 50 Fed. (2) 714, as follows . . . First. That a product claim to be valid must contain a description of the ingredients entering into the composition sufficient to define it and carry it beyond the previous development of the art. Second. That the description of the ingredients must be in terms of their physical characteristics or chemical properties, and that a description in terms of the use or function either of the ingredients or of the product itself is not sufficient. Third. If the claim indicates a characteristic ingredient without sufficient particularity to carry it beyond the previous development of the art, the claim will be read in connection with the specification and limited thereby." *General Electric Co. v. Anraku*, 10 F. Supp. 940.

"There are but two heads under which either invention here shown can be comprehended—an improvement in an 'art' or in a 'manufacture.' Each invention must clearly appear to be one or the other. There is no middle

ground, such as the *use* of a thing, upon which a claim can rest. Every claim must be so drawn as to plainly indicate what kind of invention is sought to be covered, whether an improvement in an 'art' or in a 'manufacture,' whether a process or a product. . . . The manufacture or product complete in itself, and new in its individual qualities and characteristics, and not merely in its plan of production, is what the claim should clearly and only specify. It is a fallacy to suppose, as this claim seems to imply, that an article is ever patentable merely because produced by certain proceeding. It is only patentable because it is itself a new thing." *Ex Parte Mayall*, 4 O. G. 210.

"The claims . . . contain no practical express enumeration of the various substances which enter into the product, or of the quantities of these substances, or of any of them. . . . The specification deals at great length with numerous elements to be taken into consideration. . . . We do not feel justified here . . . to declare claims void." *North American Chemical Co. v. Keno Supply Co.*, 227 Fed. at 72, 73.

"The claims . . . are . . . As a new article . . . the petroleum product hereinbefore specified, and having the characteristics described. . . . The claim could not be made more definite." *Ex parte Tweddle*, 10 O. G. 747.

"Claims 5 and 6 of the second patent refer expressly to the 'herein described product of the suprarenal glands.' These claims are valid." *Parke-Davis and Co. v. H. K. Mulford and Co.*, 196 Fed. at 500.

"The compound or composition is described as composed of certain ingredients, each well-known. . . . Obviously the proper way in which to define an invention is by claiming the compound consisting of the elements (naming them) in the proportions and combined in the manner described." *Ex parte Williams*, 10 O. G. 748.

"Appellants state that they are urging only the allowance of claims of this nature in cases where the elements

of the dyestuff in practical use are to be brought together in the presence of the textile to be dyed. They admit, however, that for some purposes the dye may be mixed in advance and the specification also indicates this. There appears to be no question, however, that for the practical dyeing of textiles the presence of the fiber at the time the elements of the dye are brought together is necessary for a satisfactory result. We have noted the various difficulties which the Examiner states have resulted from the allowance of claims of this nature but if appellants are entitled to such claims we cannot be influenced by these difficulties. . . . It is distinctly to be understood that our opinion in this case is restricted to the use of dyes which in the practical operation are to be produced in the presence of the material to be dyed and that we are not holding that an inventor of a new dye which is to be prepared in advance of the application is also entitled to a claim on the dyed product." Kracker, 16 U. S. P. Q. 100.

"Butler, 37 Fed. (2) 623, . . . holds that where an inventor has created a new thing which cannot be properly discriminated in a claim from the prior art otherwise than by reference to the process of producing it, such reference is proper." Grupe, 9 U. S. P. Q. 257.

"It is the general rule that an article of manufacture should not be defined in the claim by the process of making it.' . . . In defining the characteristics of the product, so that it may be identified, it is not necessary that they be so defined that the general public, by a mere casual inspection, can determine the novel features of the product. It is sufficient that an expert can do this. The article or product may have to be bent, broken, tested chemically, or even destroyed to determine its characteristics, but if these are so set forth that they may be determined in one of these ways it is sufficient. The applicant has stated he is unable to define his product by any other means than by the steps of the process of pro-

ducing. The Examiner has suggested no other way. . . . The claims should be allowed in their present form." Ex parte Fesenmeier, 302 O. G. 199, following Ex parte Painter, 57 O. G. 999, and Ex parte Scheckner, 106 O. G. 765, and *Globe Nail Co. v. United States Horse Nail Co.*, 19 Fed. 819.

"By which process thin, tough, flexible dishes are made of the same size and shape which may be nested together in the smallest possible compass. A dish having these characteristics and the features covered by the claims is a new article possessing advantages not existing before." *Oval Wood Dish Co. v. Sandy Creek, N. Y. Wood Mfg. Co.*, 60 Fed. at 291.

"An agent for use in flotation, comprising the reaction product of an alcohol, an aromatic amino compound and phosphorus pentasulphide. . . . The Examiner held that the counts before us did not require a reaction between the alcohol and the other elements named in each of the counts. . . . The Board of Appeals did not agree with the Examiner in this statement and held that the counts are not satisfied by the presence of alcohol purely as a solvent. We agree with the board in this conclusion." *Christmann v. Derby*, 87 Fed. 2nd, 502, 503.

"The criticism of claim 3 . . . to the effect that it sought to define an article of manufacture by a statement of the process of making it . . . seems to be one which may be considered properly by the Examiners-in-Chief in connection with the other questions of patentability." Ex parte Warren, 120 O. G. 2755.

"In general, when the patent is for a product of manufacture, it is not material by what means or by what process it is manufactured. But . . . there must be an exception to this rule to cover cases where the identity or specific character of the thing patented is affected by the means or method of its manufacture. . . . A glove made up of knitted material is a different thing from one made of cloth or leather. Its qualities are dependent on the



way in which it is made. . . . The patent should be construed as one for a glove composed of knitted blanks, such as are described in the specification.” *Lamb Knit Goods Co. v. Lamb Glove and M. Co.*, 120 Fed. at 269.

“Some degree of reference to the method of the production is carried into the claim by the words ‘wire-cut ribs.’ Where a process or a machine will produce only a specific product, and where a given product can be produced only by the specific process or machine (if there are such cases. . . ), it is difficult to see much lack of identity between the invented process or machine, and the invented product, and such situations have given rise to some rather casual and seemingly obiter statements that process and product or machine and product constitute only one invention. . . . The inventor of a new and useful product or article of manufacture may have a patent which covers and gives a monopoly upon it regardless of great variations in the making . . . in the ordinary and typical case, the method and the product are separate inventions, supporting separate patents one of which may be valid and the other not. “*Dunn Wire-Cut Lug Brick Co. v. Toronto Fire Clay Co.*, 259 Fed. at 261.

“In a proper combination claim the equivalents of an element or elements of the combination may be legally covered comprehensively by the term ‘means’ followed by a statement of the function performed by that means in the particular combination claimed.” *Zotos Corp. v. Rader*, 31 U. S. P. Q. 226.

“The attempt to broaden product claims by describing the product exclusively in terms of its use or function is subject to the same vice as is the attempt to describe a patentable device or machine in terms of its function. As a description of the invention, it is insufficient, and, if allowed, would extend the monopoly beyond the invention.” *Holland Furniture Co. v. Perkins Glue Co.*, 277 U. S. 257, 258.

“It was unnecessary to do more than state the limits of invention in terms of result, because the results desired are not functional, and do indicate limits in terms of lamp life and candle power which are likewise presumably familiar to any competent electrician.” *General Electric Co. v. Nitro Tungsten Lamp Co.*, 266 Fed. at 1000.

“We do not deem it necessary, in order to uphold the claim, that the stated ratio designate a critical area. . . . An applicant for a patent may be partly arbitrary in the selection of a limitation above which he claims and below which he abandons his invention. . . . The rule upon which the appellant relies forbids only such limitations as are wholly arbitrary, that is which in no true sense describe or define the invention and its departure from the prior art. Such is not the case here. . . . At some pressures the ratio does not indicate a ‘critical point.’ At all pressures it is indicative of an important element of the invention.” *Sun Ray Gas Corp. v. Bellows Claude Neon Co.*, 9 U. S. P. Q. 437.

“Claims read as follows: 22. A discharge tube for positive column light. . . . If the teachings of Hertz are followed, a positive column light must result. We do not think this is true in the teachings of appellant. . . . The phrase ‘for positive column light’ is an essential element in the novelty of the device.’ ” *Buttolph*, 24 U. S. P. Q. 85, 88.

“The various electrolytes of the defendant do not escape . . . as the use of term about 130 degrees in that claim is repugnant to a limitation of its scope to an electrolyte with a boiling point of precisely 130 degrees C.” *Aerovox Corp. v. Micamold Radio Corp.*, 15 F. Supp. 286.

“Claim 1 . . . Cured tobacco having gas expanded constituents. . . . The process claims . . . have been allowed . . . and if the subject matter of the process claims as allowable it would appear to be inconsistent to refuse the

allowance of the product claim on the ground of inoperativeness." *Hawkins*, 8 U. S. P. Q. 237.

"It is further insisted upon the part of the appellant that the invention of the patent does not consist alone in the use of new gypsum . . . but also includes the fine grinding possible only in the Church attrition mills . . . The claims in suit do not call for any special form of grinding." *Church v. Alabastine Co.*, 14 Fed. (2) 666.

"An etched plate has certain well-known physical characteristics, and these characteristics are made clear and explicit by the use of the word 'etched' in defining them . . . and is not objectionable." *Ex parte Scheckner*, 106 O. G. 765.

"The invention . . . is set forth . . . as follows: 'This particular invention consists in a spirally wound strip of asbestos shaped . . .' claims . . . do not specify that the strip is of asbestos. Obviously these claims are incomplete." *Queen*, 2 U. S. P. Q. 52, 53.

"Claims . . . are objectionable for the reason that they attempt to limit the article by the method of manufacture. The article so made differs from the former product only in the fineness and homogeneity . . . Such differences do not make an article patentable." *Goldsmith*, 4 U. S. P. Q. 39.

"The defendant claims that although the first patent, now expired, was both a product patent . . . and a process patent . . . the product patent is limited to a pectous solution produced from apples by the patented process. . . . The product claims of the first patent are not limited by the process claim." *General Foods Corp. v. Broder*, 28 U. S. P. Q. 19.

"Baceland can validly claim a new product which is produced by exactly the steps which he has described . . . which may then contain or even be substantially composed of a substance that if itself is not patentable, provided it can be shown that it was manufactured in a way not taught by the prior art, and can be identified

by the original methods or steps in the process. Baeke-land could also obtain valid patents for a varnish, for an indurated material and method for the making of a solid substance out of impregnated or filled cellular tissue, for obtaining a simple and desirable reaction product by the use of small amounts of accelerating base, or by the use of . . . ammonia, if in each of these patents his claim for invention depended upon recognition by him of the process and principles which he had discovered and which had not been described in the prior art. A separate patent application for each of these processes or products could be successfully maintained in the Patent Office and separate patents issue thereon, if these applications were co-pending. The date of allowance and issue of any one of these patents would not determine the validity of any other of the co-pending applications, nor could these earlier patents be cited as prior art against the other applications pending at the same time." *General Bakelite Co. v. General Insulate Co.*, 276 Fed. at 184.

"The application of these admissions . . . is fatal to its first and second claims. They are drawn to cover a combination of substances, old in the art, the patentability of which is asserted upon the theory that thereby a new result, mono-calcium silicate, is produced. No proportions are given, however, and it would require experiment to determine what proportions were necessary to secure this result . . . It is proved, however, that by compounding the ingredients in the proportions stated in the third claim a new and highly useful result is obtained. . . . The third claim is sustained." *Panzl v. Battle Island Paper Co.*, 138 Fed. at 53.

"Having allowed claims for the method of processing the butter there is no further invention involved in using such butter in the regular way in the making of cake, for that is its intended use. Whatever effect the use of the processes butter has on the cake is merely a matter of degree." *Hoffman et al*, 4 U. S. P. Q. 359.

“The subject matter of the appealed claims is a hygroscopic element of great sensitivity and durability for use in humidity responsive apparatus . . . the substance known as elastin. . . . It is true that merely discovering a new property of some known substance would not afford basis for a claim for that substance as such, it is possible that if a claim be drawn in such a way as to be directed to an element taking advantage of the discovered properties, that considerable latitude can be allowed in the form of claim. . . . The present claims do not set forth an apparatus embodying a piece of this material . . . yet we believe the present form is also permissible as being directed to a hygroscopic element . . . still limits the claim to an element, that is, an article which may be used in such hygrometric apparatus.” *Loepsinger*, 25 U. S. P. Q. 333.

“Claim 18 states the wire is ‘coiled to helical form in the absence of a mandrel.’ This does not explain how the wire is formed or coiled but merely how it is not formed. There may be other ways than that disclosed by applicant to form a coil in the absence of a mandrel. Applicant has not disclosed any other way than by pushing the wire by means of the propelling rollers and guide into the cavity of the die-block yet his claim is directed to any and all means for forming the coil save the means which employ a mandrel. We regard such a claim as broader than the disclosure and clearly unpatentable.” *Ekstedt*, 13 U. S. P. Q. 303.

“We cannot see that *Underwood v. Gerber*, 149 U. S. 224, . . . affects the validity of claims 12 and 17; it did not hold that a single patent might not contain claims both for a composition of matter and for articles in or on which it was used. It is not indeed apparent how a patentee gains anything by such claims; the article is already covered by claims for the composition, if it contains the composition. On the other hand, though such claims may be idle, they do not expand the monopoly,



which covers all uses of the composition anyway.” *E. I. Du Pont de Nemours & Co. v. Glidden Co.*, 67 Fed. (2) 397.

“The article claims are drawn to a freely-falling drop or gob of molten glass. The drop exists as such only while falling to the mold. . . . It is the finished product that the patent statutes are designed to protect as ‘manufactures’ and not something which is produced at a particular stage of the manufacturing process and which is evanescent.” *Ex parte Howard*, 328 O. G. 251.

“It is a metallic article covered with a coating of compact, coherent, tenacious and flexible nickel. . . . It is the article claimed in claim 4 . . . Claim 4 is . . . patentable as a manufacture. It was a new product. . . . The text of the specification sets forth as one of the inventions deposits of nickel having certain characteristics.” *United Nickel Co. v. Pendelton*, 15 Fed. at 741, 746, 747.

“‘(5) A protective covering for iron or steel . . . comprising . . . normal ferrie and ferrous phosphate’ . . . I hold that claims 5 and 6 are valid.” *Parker Rust Proof Co. v. Ford Motor Co.*, 6 Fed. (2) at 651, 658.

“If, unsupported by its words, specifying the function or effect of the supposed invention, a claim is invalid, I think that it cannot be validated, at least as a general rule, by such words of function or effect, for it would thereby be made a claim for a mere function or effect.” *Bituminous Products Co. v. Headley Good Roads Co.*, 2 Fed. (2) 87.

“A patent claim for a structure which otherwise would be void may be valid solely by reason of the limitation of an element by a ‘whereby’ clause, if the limitation calls into being a new combination that produces a new and useful result.” *Brewer v. Lichenstein*, 278 Fed. at 513.

“If appellant really has a product here which so differs in character from the product of his patent as to entitle him to a patent upon it that difference should have been made to appear as a fact. It cannot be deduced simply

from his discovery that it will produce results of which he was not formerly aware. . . . He may teach here a scientific explanation, not given in the patent, as to results obtained by the patent process, but he is not entitled to a patent for such scientific explanation." James, 29 U. S. P. Q. 432, 433.

"It may be that some person will hereafter succeed in concocting a coating for an engraving plate that will be much superior to complainant's by the use of an ingredient in place of silicate of soda or potash. . . . It is not even probable that the patentee was the first to discover the desirability of bonding the particles of the coating more strongly to the base-plate than each other. . . . The patentee . . . , says he has solved it in one way by the use of certain ingredients, and he is entitled to his process, and the particular product of his process described in the third claim." Hoke Engraving Plate Co. v. Schraubstadter, 47 Fed. at 507, 508.

"The appellant had attempted to distinguish his claims from those of the Liebig patent, by adding the words 'excepting nickel' to each of the claims. . . . Liebig . . . proposes to protect the silvered surfaces of mirrors . . . by . . . a coating of . . . nickel . . . This last named patent . . . caused the appellant here to amend his application and claims by the elimination of nickel and the insertion of the language in the claims 'excepting nickel.' . . . Claims . . . which claim iron and cobalt . . . were allowed." Langdon, 25 U. S. P. Q. 417.

## II. Compositions of Matter

"Product patents or patents of compositions of matter are distinct from patents of the process by which the product may be produced. The former, if sufficiently described, may exist and be sustained independently of the latter. . . . Hence any narrowing of process claims is not necessarily a narrowing of product claims." Holland Furniture Co. v. Perkins Glue Co., 277 U. S. 254.

“A new and useful composition of matter, such as mixture claims 9, 11, 12, is patentable. The complaint that the mixture claims give no information by which the mixture could be identified, does not invalidate them. None was necessary because both the ingredients of the mixture were known and the means of identifying them were known. This was sufficient identification. . . . *Cochrane v. Badische Anilin and Soda Fabak* and *The Wood Paper Patent* are not in point because there the claims purport to be for new individual products theretofore unknown and of which there were no means of identification. The mixture claims here are not for the bleached flour but for the mixture which reacts to produce bleached flour.” *American Purifyne Co., Inc. v. Novadel Process Corp.*, 3 U. S. P. Q. 185, 186.

“The patent . . . describes a new product with such clear marks of identification that it can be readily recognized aside from the process for making it . . . The patent also describes a process for making it . . . which was new. . . . He made the single claim . . . for the described product, having certain distinguishing characteristics which are set forth in the claim with great fulness. . . . The claim is not restricted to the product made by the described process, but covers the chemical individual, however produced.” *Maurer v. Dickerson*, 113 Fed. at 874.

“There can be no description of a composition of matter without some designation of its ingredients. If the selection or choice or designation of an essential ingredient of a composition of matter may be referred to, inaccurately as we think, as a process, the ‘process’ is one inseparable from the composition itself. The description of one necessarily limits the other. Hence the patent of the product cannot extend beyond a product having the designated ingredient.” *Holland Furniture Co. v. Perkins Glue Co.*, 277 U. S. 255, 256.

“Product claims are not sustainable unless the specification discloses at least one practicable way in which to make the product.” *Hemming Mfg. Co. v. Cutler-Hammer Mfg. Co.*, 243 Fed. at 600.

“The inventor must disclose that some particular variety of steel will produce results not theretofore known to, or understood by the art. Such a disclosure may constitute invention.” *Short*, 432 O. G. 573.

“It is true that Claim 8, by contemplating a tungsten content as low as 5 per cent, includes grades of the alloy which would not have the characteristic red hardness and which would be workable by forging or otherwise. Claim 8, as drawn, might not be sustainable if the compound, in the softer grades, was old; but, while the red hardness gives the sharpest novelty and the extreme commercial value, we must conclude that the alloy itself, to the extent of the whole scope of this claim, was novel, and even in the softer grades was sufficiently useful to support patentability.” *Haynes Stellite Co. v. Chesterfield*, 22 Fed. (2) 638.

“We agree with the Board that said claims describe a product consisting in part of partly cured concrete, whereas it is clear from appellant’s specification that the product resulting from his process is a paving for streets in which there is no partly cured concrete. . . . We find no error . . . in rejecting said claims.” *Stubbs*, 13 U. S. P. Q. 359.

“The second part of the claim is merely a correct description of the first part and the first part broadly claims as an invention a product of nature in the form of a chemical element for which a product claim as distinguished from a process claim cannot be validly awarded.” *General Electric Co. v. De Forest Radio Co.*, 28 Fed. (2) 643.

“This application relates to an alloy particularly for use in pistons. The Examiner has allowed similar claims to those rejected in which the alloy is restricted to the

composition covered by the appealed claims but it is his view that since the appealed claims may cover compositions containing other matter, they might read on alloys having substantially different characteristics from appellants'. The Examiner apparently has given no weight to the fact that the alloy is specified in claims 1 and 6 as having a high tensile strength at elevated temperatures and a high modulus of elasticity or that claim 7 is restricted to a piston having an alloy characteristic of low temperature aging at about 150° C. for about 24 hours. We regard the inclusion of these characteristics in the claims as limitations to a type of alloy and the appealed claims in our opinion would not dominate alloys having the composition claimed but which possessed characteristics substantially different from those called for in these claims." Archer, 18 U. S. P. Q. 216.

"While claims 1 . . . are entitled a face plate comprising a disc, we are of opinion that these claims must be considered broadly and only for the alloys specifically set forth as constituting the body." Laise, 8 U. S. P. Q. 62.

"Taking these claims at their face and unlimited by the disclosure of the process described in the specifications, they would cover every bleached and dyed skin however produced, provided only that the process had not impaired the strength, texture, or luster of the leather and hair. True, it has been said that product claims may cover the article discovered, 'however produced.' . . . But no such broad statement can be accepted as universally true. The statement has as frequently been made that a patent may not issue for a result as such, because that would extend the monopoly beyond the teachings of the inventor, and would prevent all others from making the same thing by any means whatsoever. . . . While it is true that one may have both a process and a patent product and that the latter will sometimes cover more than the product of the process . . . , nevertheless such product, like any other patented invention, must not be



defined exclusively in terms of its use or function.” *Steinfur Patents Corp. v. William Beyer, Inc.*, 16 U. S. P. Q. 221.

“An inventor may not describe a particular starch glue which will perform the function of animal glue and then claim all starch glues which have those functions, or even all starch glues made with three parts of water and alkali, since starch glues may be made with three parts of water and alkali that do not have those properties.” *Holland Furniture Co. v. Perkins Glue Co.*, 277 U. S. 256, 257.

“Claims . . . are invalid because they call for no tempering agent, and are, therefore, not supported by the specification.” *Simplicator Corp. v. A. B. Dick Co.*, 2 U. S. P. Q. 433.

“The language of the claim . . . states that the substances is ‘practically free from . . . associated gland tissue.’ . . . Reference to the specifications makes the meaning of this clause clear. . . . The first claim . . . covers . . . a substance practically free from inert organic matter. . . . It is quite in accord with well-recognized canons of construction to turn to the specifications to see if they will remove all doubt as to the sense in which the words of the claim are used.” *Parke-Davis and Co. v. H. K. Mulford and Co.*, 196 Fed. at 498.

“The claims are: ‘(1) A baking preparation . . . essentially free from pulverulent phosphatic material.’ . . . The inquiry . . . whether what has been done required the exercise of the inventive faculties . . . must . . . be answered in the affirmative.” *Rumford Chemical Wks. v. New York Baking Powder Co.*, 134 Fed. at 386, 388.

“The amendments were accompanied by an argument which enabled the examiner to understand . . . and to realize the significance of the expressions ‘a small percentage’ and ‘substantially free from glycerine or other soluble substance.’ . . . We think it is clear that the patent . . . has been infringed.” *McCormick Waterproof*

P. Cement Co. v. Medusa Concrete W. Co., 222 Fed. at 292.

"The claims are now broader than a mere claim for the chemically free base, or active principle, and that they cover any substance which possesses the physiological characteristics of the glands and is substantially pure. . . . Nor do any of the claims call for only an 'effect.' . . . There is no claim which selects a single characteristic or function. The very phrase 'physiological characteristics and actions of the suprarenal glands' . . . is always coupled with at least two other differentia." Parke-Davis and Co. v. H. K. Mulford Co., 189 Fed. at 101, 103.

"The claim . . . is a valid claim for the real invention . . . it can be recognized aside from the description of the process for making it . . . the product can be identified by the characteristics specified in the patent." Read Holiday and Sons v. Schulze-Berge, 78 Fed. at 494.

"Appellant has specified a large number of substances containing the common quality which fits them for use . . . no other phraseology can be employed to accord to appellant the protection to which he is entitled . . . there is a fair presumption that the substances embraced in the class claimed are generally capable of accomplishing the purposes of the invention . . . the [broad] claims . . . should be allowed." *In re Ellis*, 167 O. G. 981, distinguishing *Incandescent Lamp Patent*, 159 U. S. 465.

"The only ketone disclosed in the application is acetone. This seems to have been the only substance appellants had in mind for serving the purpose. . . . They confined themselves to this until five years after the filing of their application, during which time the finishing art had been extensively developed, when they presented the present claims. There is nothing in the application to warrant the presumption that they had discovered that ketones generally could be used. . . . The [broad] claims

were properly rejected." In *re Dosselman and Neymann*, 167 O. G. 983.

"Each claim is, in effect, a separate and distinct patent. The first secures to the patentee and his assigns 'the electro-deposition of nickel by means of a solution of the double sulphate of nickel and ammonia, or a solution of the double chloride of nickel and ammonium, prepared and used in such a manner as to be free from the presence of potash, soda, alumina, lime, or nitric acid, or from any acid or alkaline reaction.' " *United Nickel Co. v. Central Pacific R. Co.*, 36 Fed. at 188.

### III. Broad Claims Need Broad Foundations in Specifications

"A distinction between patent applications involving chemical compounds, and these involving other products has been recognized by the authorities. . . . The appellant here does not allege in his specification, or show by the affidavit, that amines normally liquid and soluble in the distillate, are generally capable of accomplishing the desired result. . . . All amines are usually liquid normally . . . there are many thousands of compounds included within the term amines, many of which would be of doubtful operativeness when used alone. . . . Claims 2 and 8 . . . must be held broader than appellant's disclosure and to have been properly rejected." *Burk*, 24 U. S. P. Q. 218, 219.

"The inhibiting property of various compounds is a matter which cannot be determined by analogy. . . . Any doubts of patentable differences between the groups of claims should be resolved in favor of allowing the claims. . . . Where the action is one which appears to be mainly empirical or non-predictable beforehand, we believe applicant is entitled to the claims." *Bennett*, 29 U. S. P. Q. 614.

“A composition . . . is described as consisting of paraffin, kerosene and grease, such as cup grease . . . no chemical action is involved in any of these mixtures. . . . So the rule applicable to scope of claims in chemical cases does not apply. . . . For this reason we believe the original disclosure of grease broadly is sufficient to warrant a claim for grease as an ingredient.” Rawles, 3 U. S. P. Q. 199, 200.

“The Examiner considers these claims . . . are of such scope as to include structures where the rubber is next to the fabric and the rosin is on the outside, which would be a structure not disclosed. We see in this an application of the principle generally applied in chemical cases where reactions of chemical substances are involved and where terms of claims may not be so broad as to include many chemical compounds not disclosed. No case is recalled where this principle has been authoritatively held in any machine or mechanical structure case. The features involved . . . are not chemical in the sense of being chemical reagents involved in a reaction but are purely physical and are mechanically involved. . . . The elements involved here do not come within the prohibited situation applied in chemical cases and . . . they may be properly allowed.” Boughton, 2 U. S. P. Q. 242.

“Claims have been rejected which recite thickeners in functional, general terms only. . . . It is clear that chemists have not recognized any particular class of substance that perform the functions set forth hence to merely recite the functions of such substances, clearly renders the claims indefinite . . . as to constitute a failure . . . to comply with the requirements of the said statute.” Laucks, 32 U. S. P. Q. 76, 77.

“No one of the four claims in suit names a specific substance, but each purports only to describe a class. In the light of the admitted facts, we are of the opinion the description is too indefinite and comprehensive. The number of substances falling within it is enormous—in

excess of 250,000. Of these Perkins tested only a small percentage, and in such tests he found but few collectors thought to be effective under any conditions. Out of many, selected as being representative and tested by experts in preparing the case for trial, but few disclosed valuable collecting properties. To say that appellant is claiming only such substances within the class description as are in fact good collectors is to beg the question. To obtain the monopoly afforded by a patent, the patentee is required to disclose what he has found, and not merely to suggest that something may be found by further and extensive experimentation. A generic monopoly must rest upon a generic discovery; and this Perkins did not make." *Metals Recovery Co. v. Anaconda Copper Min. Co.*, 31 Fed. (2) 103.

"The rejected claims cover broadly the compound including  $N:(CH_3CO)X$ , X being any aliphatic or aromatic radicle whatever. The facts presented do not support the patentability of such a broad indefinite concept. It is impossible to imagine all the possible variations. Such variations must necessarily produce marked changes in the physical characteristics of the product, as evidenced by the table on page 2 of Schmidt's patent. Whether such changes would result in an operative product of one patentable over Schmidt's disclosure it is impossible to determine. . . . We do not find that the Board of Appeals was manifestly wrong in rejecting the claims." *Carswell*, 21 U. S. P. Q. 582, 583.

"The claims all relate to stabilized white petroleum oils and to a method of producing such oils, the novelty of both the process and product residing in the stabilizing agent used. . . . As the original specification mentions specifically only two mercaptans, betanaphthyl mercaptan and heptyl mercaptan, it is the examiner's view that applicant is not entitled to generic claims. It has frequently been held, in applications where generic claims were sought and only one or a very few substances of a class



have been mentioned as suitable for the claimed purpose, that generic claims cannot properly be allowed. In all such cases, however, so far as we are advised, the basis for generic claims must be drawn by inference from the mention of one or a few examples from the class. In the present case there is no necessity for drawing an inference from the specific mention of two examples as these specific substances are merely mentioned by way of example, the positive disclosure being that a well-defined class is suitable for the claimed purpose. It seems to us that the claims are fully supported by the disclosure in reciting, as appellant here does, that a class of substances is workable for his particular purpose." Sloane, 22 U. S. P. Q. 222.

"We are of opinion, considering the facts of record, that appellant is entitled to claim an 'organic detergent-forming group.' If there is any doubt as to his right to claim such group, the doubt should be resolved in his favor. . . . Claim 26 was rejected upon the theory, as we understand the examiner's decision, that, although appellant disclosed only one example of the hydroxy-aromatic group—'phenol,' the claim was sufficiently broad, due to the language 'comprising a condensation product containing a hydroxy-aromatic group,' contained therein, to cover all members of that group. We are of opinion that the only proper deduction to be made from the decision of the examiner with regard to that claim is that the hydroxy-aromatic group contains many compounds, some at least of which differ substantially in their properties. We think that claim was properly rejected. . . . It is true, as argued by counsel, that appellant is entitled to claim not only the substance enumerated by him in his specification, but also their equivalents. However, in cases of this character, involving chemicals and chemical compounds, many of which of course differ radically in their properties, it must appear in the specification, either by the enumeration of a sufficient number of the members

of a group or by other appropriate language, that 'the chemicals or chemical combinations included therein were generally capable of accomplishing the desired result.' "

Walker, 22 U. S. P. Q. 56, 57.

"The examiner did not reject claim 21 on references but took the position that applicant having disclosed antioxidants involving only benzene and naphthalene radicals, is not entitled to a claim of the scope of claim 21, which includes antioxidants involving not only the benzene and naphthalene radicals but also the other radicals of the benzene series. The examiner states that the rule is well established that in a chemical case involving a reaction of unknown character an applicant is entitled to broad claims only when he shows by a sufficient number of test examples that there is a general quality common to the entire group claimed and he does not consider that the disclosure of the two antioxidants is sufficient to establish such a general quality common to the group covered by claim 21. . . . Reversed." Teppema, 15 U. S. P. Q. 279.

"Claims 1, 2 and 7 are drawn to an alloy 'comprising silver and a 'measurable' amount of indium and claim 2 specifies that the silver predominates though it does not clearly appear whether the silver predominates over all the other constituents or only over the indium. The Examiner points out that these claims seek to cover all alloys in which silver and indium are used, even though they constitute but a small proportion of the alloy, and that they cover possible alloys which would differ from each other in their characteristics as widely as iron and lead. He quotes from a decision of the Board of Examiners-in-Chief in which it was stated that there is no such thing as a genus covering all alloys containing the same metals, and that any invention must lie in the production of a definite article of definite characteristics. . . . 'In our opinion appellant is entitled to no claim which is broader than an alloy comprising silver, in such proportions that the alloy is tarnished by exposure to the atmos-

phere, and indium in such quantity that such tarnishing is prevented thereby. It is not intended to suggest the language to be employed but only to indicate the limits of the invention described in the specification." Gray, Bailey and Murray, 11 U. S. P. Q. 256.

"Claim 17 is held to be broader than the disclosure in that no oxy or hydroxy compounds are disclosed. The Examiner points out that such compounds should not be claimed broadly without showing specific examples of how they react in this reaction. He also states that innumerable ethers and alcohols and their substitution products are included in the terms of the claim and many of them would produce other reactions than those disclosed and gives a specific example. In response appellant points to the various examples given in the specification but no specific examples of the oxy or hydroxy compounds and we feel that the disclosure is not sufficient in view of the breadth of the terms used in the claims." Lilienfeld, 17 U. S. P. Q. 394.

"The patent in suit . . . contains several statements such as 'an aromatic or cyclic polybasic acid' and resinous carboxylic organic acid . . . specifically mentions only phthalic acid. These general statements are not a sufficient basis for the broad claims without a knowledge that anything other than phthalic acid would work." General Electric Co. v. Paramet Chemical Corp., 26 U. S. P. Q. 90.

"Appellant has discovered that she could produce alloys of caesium which were sufficiently stable in air so that they could be easily handled without fear of oxidation of the caesium, yet these alloys were sufficiently unstable in character that caesium could be obtained therefrom by suitable means, for example, vacuum distillation. . . . No definite amounts of caesium are necessary. . . . Appellant's position is well taken . . . claim 10 should be allowed." Brophy, 25 U. S. P. Q. 77.

"The statement in the original specification, page 2, lines 1 and 3, is that these synthetic resins may be pro-

duced from a 'diphenylol naphthene' such as diphenylol cyclohexane and formaldehyde. Likewise the present claims containing the broad expression were presented in the original application. This application therefore does not present the situation which sometimes appears in these chemical cases, namely, in originally naming only one specific compound and not referring to any group or class and without any indication that such whole class might be used. This application as originally presented here clearly includes a scope of disclosure sufficient to cover the class. The question here presented is not one of scope as to what members of the class would probably be operative and claimable. . . . It is our opinion that since the naphthene group of hydrocarbons appears to be comparatively limited in number and since that portion of the compound takes no particular part in the chemical reaction involved in the condensation step, the disclosure is sufficient to warrant the broad claim directed to this group." Moss, 14 U. S. P. Q. 325, 326.

"It is the examiner's opinion, first, that R and Q, as in claim 1, and the expression 'carbon compound' of claims 2 and 19, which are the proposed variables, have not been supported by a sufficient range of types of radicals in the specification. The examiner notes several that are not represented. There are probably other specific groups that might be named, depending on how specific the search becomes. It is contended in the brief that all of the particular instances named by the Examiner, excepting two which could not be identified, have been tested or found described as reactive under equivalent conditions. While this is not originally disclosed in the case, it may be considered as a showing of chemical facts or reactions as such. . . . Claims 1, 2 and 19, are sufficiently supported by the disclosure. Claims 5 . . . 9 set forth a graduated series of arbitrary subdivisions of the whole compound not described in the specification. These subgroups might be assumed to exist theoretically . . . and



we do not understand that any of them can exist as definite subcompounds. . . . Claims 5 to 9 are not allowable." Lulek, 25 U. S. P. Q. 372.

"The original specification shows that nitric acid was a known shrinking agent . . . and it is our opinion that the invention in this application is in the use of a shrinking agent broadly . . . rather than in the use of a particular agent. . . . The appealed claims are not broader than appellant's invention." Dickie and Moncrieff, 28 U. S. P. Q. 193.

#### IV. Markush Type Claims Enumerate Alternatives

"It is stated by petitioners that they are quite willing to adopt the following clause or expression in place of that objected to by the examiner: 'an acid selected from the group which consists of, first, the unsubstituted aliphatic monocarboxylic acids including the cycloparaffinic; second, the aromatic monocarboxylic acids, and, third, the aralkyl monocarboxylic acids.' The examiner states as to this proposed substitute expression: 'It conforms to the Markush decision and is chemically accurate.' . . . The examiner regards the claims under objection as alternative in form and as including different substances not falling within any known genus or group. The petitioners note that these compounds included in the expression objected to 'first, belong to the genus of acids, second to the genus of organic acids, third to the genus of monocarboxylic acids—that is, the petitioners contend that all of the acids are monocarboxylic acids and that this brings the terms of the claims within the doctrine of the Markush case. . . . Whether the proposed change in the form of expression is made or not, it is held the examiner should withdraw his objections." Clark and Malm, 11 U. S. P. Q. 53, 54.

"It does not appear that the Office should compel an applicant to use a Markush (1925 C. D. 126) type of claim." Cahott, 26 U. S. P. Q. 99.



## CHAPTER 13

### OF INFRINGEMENTS OF A VALID PROCESS CLAIM IN THE PATENT

The word "infringement" is not defined in the statute. It becomes necessary, therefore, to ascertain what the Courts have deemed infringements of claims to processes as well as of claims to products and manufactures. Process claims are taken up first, it being noted that merely selling or using a product is not an infringement of a claim in a patent covering the process of making it.

#### WHAT THE COURTS HAVE SAID

##### I. In General

"Infringement is the unauthorized making, using, or selling for practical use, or for profit, of an invention covered by a valid claim of a patent during the life of the patent. It may involve any one or all of the acts of making, using, and selling. It is therefore an infringement for an unauthorized person to make a patented machine for use or for sale, though in fact it is neither used nor sold." *Johnston v. Davenport Brick and Tile Co.*, 237 Fed. at 671, quoting 1 *Rogers on Patents*, 137.

"An infringement takes place whenever a party avails himself of the invention of a patentee without such a variation as constitutes a new discovery." *Acme Steel Goods Co. v. American Metal Fasteners Co.*, 206 Fed. at 481, quoting *Norton v. Jensen*, 49 Fed. 859.

"The case does not turn upon the actual process which the parties are employing, but upon whether the process employed by the defendant is the same as that described in the patent to the complainant." *Ward v. Finley Method Co.*, 259 Fed. at 872.

“A mere expression of willingness to grant or sell licenses will not, of itself, confer upon any, the privilege to use the specialty of the patent, and claim exemption from a charge of infringement on the ground of being simply engaged in experimentally testing its desirability or utility.” *Clerk v. Tannage Patent Co.*, 84 Fed. at 644.

“Infringement . . . is a tort or wrong.” *Fried. Krupp A. G. v. Midvale Steel Co.*, 191 Fed. at 591.

“An infringement is a tort, and any one who aids in it is answerable for it.” *Walter S. Newhall Co. v. Baltimore & O. R. Co.*, 258 Fed. at 651.

“An infringer is not an outlaw. If convinced that the patent is invalid or that he is not infringing he can go on . . . subject to the risk of an injunction and an accounting.” *Diamond Stone-Sawing Machine Co., v. Brown*, 166 Fed. at 308.

“In administering the patent law the court first looks into the art to find what the real merit of the alleged discovery or invention is, and whether it has advanced the art substantially. If it has done so, then the court is liberal in its construction of the patent, to secure to the inventor the reward he deserves. If what he has done works only a slight step forward, and that which he says is a discovery is on the border line between mere mechanical change and real invention, then his patent, if sustained, will be given a narrow scope, and infringement will be found only in approximate copies of the new device.” *Eibel Process Co. v. Minnesota and Ontario Paper Co.*, 261 U. S. at 63.

“A Mr. Telfair, who must have had some knowledge of the Holly devices, undertook to build machines for the defendant. . . . If the result of this knowledge on the part of the defendant had been an infringing machine, no amount of protestation . . . that this exact knowledge was lacking would save it from the charge of infringement. On the other hand, if the defendant’s machines do not infringe, it makes no difference whether

these machines were built deliberately to avoid infringing the Holly patent, or whether by accident a machine was developed along other lines which did not infringe the Holly patent." *F. N. Burt Co. v. W. C. Ritchie & Co.*, 251 Fed at 921, 922.

"At the date of the Hitchcock patent, there were other mechanical feeders, so that his method was simply another method for feeding molten glass from a furnace. . . . The Hitchcock patents have now expired, and so far as we can see have left no impress on the art. No commercial Hitchcock feeder was ever built or used. . . . They are mere paper patents, and not entitled to any substantial range of equivalents." *Hartford-Fairmont Co. v. United States Glass Co.*, 2 Fed. (2) at 110.

"It is what is called a 'paper patent,' in that it has never been used by the appellant, and that though it is in the business of selling electrical controllers. . . . Its use would require a motor adapted thereto, and up to this time it has not deemed it best to put such a motor on the market. The validity of the patent, however, is not affected by its non-user. . . . But . . . the patent should not be given a broad or liberal construction." *Westinghouse E. & Mfg. Co. v. Toledo P. C. & L. Ry. Co.*, 172 Fed. at 372.

"The Rosenbaum patent in suit . . . was never commercially used or described in technical literature. It is a paper patent. . . . The method outlined in the Rosenbaum patent and that used by the defendant do not accomplish the same thing in substantially the same manner. . . . The Rosenbaum method is predominantly a liquid phase process while defendant's method is predominantly a vapor phase process." *Gasoline Products Co. v. Champion Refining Co.*, 24 U. S. P. Q. 238, 239.

"A strict construction of the patent in suit probably would not include defendant's composition and process; but, as the Ellis patent in suit possesses distinct properties by a combination of known ingredients not disclosed

in the prior art, this contention is not maintainable. Considering the objections to prior varnish removers . . . the allowance of the broad claims by the Patent Office was justified. They must be liberally construed." *Chadeloid Chemical Co. v. Frank S. DeRonde Co.*, 146 Fed. at 992.

"The continuous use of the pump to get the proper percentage of skim milk out of the vessel is necessary or functional in continuously separating the cream, and causing it to be thrown out at the apex. . . . The skim milk, however, is not removed from the vessel by centrifugal force, but by the external air pressure from above. . . . If we put upon the claims a construction which will make them applicable to the process shown by the patent in suit, then appellees do not infringe. Appellants can have no monopoly of the art in general of separating the cream and skim milk from a continuously increasing batch of full milk." *Philadelphia Creamery Supply Co. Ltd. v. Davis & Rankin Bldg. and Mfg. Co.*, 84 Fed. at 884, 885, affirming same 79 Fed. 357.

"If . . . the plaintiff had invented an entirely new process, which had revolutionized the art of preparing rawhide for belting and other purposes, it might be that the court ought to give that broad construction to the patent which was justified in the case of a foundation patent; but . . . when, as in this case, all the substantial steps in the process were old, the utmost that the plaintiff was entitled to was protection against those who used, in substance, his precise process." *Royer v. Coupe*, 146 U. S. at 531.

"Even if defendant were correct in its contention, the construction of defendant's stems brings the bulb partly within and partly above the flattened mass, so that the actual contribution to the art by Mitchell and White is employed. To permit the appropriation of valuable advances in such a manner would be to take away all incentive to those engaged in inventive activity." *General Electric Co. v. Sava Electric Corp.*, 4 Fed (2) at 587.

“One of the primary objects of Fessenden was ‘to utilize the interaction of forces produces by a continuously maintained stream of oscillations as they are received with forces produced at the receiving station by oscillations practically continually produced by a local source.’ Surely, this object is attained by defendant. . . . I find myself unable to say . . . there is any essential difference.” *Westinghouse Electric & Mfg. Co. et al. v. Taub*, 4 Fed. (2) at 607.

“Defendant asserts that its process is not and can not be identical with the Weizmann process because defendant has obtained bacteria from a Paris laboratory isolated and stored there by Auguste Fernbach long before the issuance of the Weizmann patent and that it now uses bacteria styled PTB derived from the Fernbach bacteria. Before considering whether the foreign origin of defendant’s bacteria is of any consequence it may be well to determine whether defendant’s present bacteria, styled PTB are the same as the bacteria styled USC which were held to infringe the Weizmann patent. If the identity of PTB and USC can be established from the facts stated in defendant’s affidavits no further proof on that score is required. . . . Defendant contends that PTB are not the bacteria of the claims of the Weizmann patent because: (1) PTB came from the Fernbach laboratory in Paris. However, it does not matter where they came from if they possess the identifying characteristics specified in the Weizmann patent. (2) PTB had been hibernating from 1912 (a date before Weizmann’s invention) until 1932. Yet if Fernbach had used his bacteria in France in 1912 in carrying out the process described in the Weizmann patent—and there is no suggestion that he did—it would be immaterial. Prior use in a foreign country could not affect the validity or scope of a United States patent.” *Guaranty Trust Co. of New York v. Union Solvents Corp.*, 17 U. S. P. Q. 520, 521.



“This two-staged process—first cyaniding, next concentrating—being the only disclosure of Brown and the claims embodying those two separate, individual, completed stages or steps, it follows that any process which makes concentration an intermediate and completed step, one that precedes final and effective cyaniding, is a process different from the one Brown disclosed and claimed. . . . After the defendant’s concentration is finished, the by-product goes forward to be subsequently treated by a protracted process of cyaniding. . . . It is a system condemned by Brown, and one he sought to avoid. . . . Defendants do not infringe.” *Tonopah Mining Co. v. Vincent*, 212 Fed. at 167, 168.

“The process possesses novelty and utility, and the patent removed the difficulties and inefficiencies of the prior art; it, having made a prominent step forward, is, I think, entitled to a broad construction with the corresponding right to invoke the doctrine of equivalents.” *Malignani et al v. Hill-Wright Electric Co.*, 177 Fed. at 433.

“Claims are to be construed in the light of the contribution to knowledge actually made by the inventor . . . mere ability to fit to a thing the words of a claim does not prove infringement.” *Electro-Dynamic Co. v. United States Light and H. Corp.* 278 Fed. at 84.

“Olson discovered that the only way . . . was . . . starting the coating process before oxidation. . . . He said . . . dangerous oxidation occurs as the fourth, fifth or sixth second. . . . The evidence shows a lapse of 25 seconds . . . in defendant’s practice . . . such a practice could not have infringed.” *American Bearing Corp. v. Milwaukee Die Casting Co.*, 32 Fed. (2) 22, 23.

“The process employed by the defendants is precisely the same as the process discovered by complainants and covered by the process claims of their patents. It involves the forming of an obstruction of concentrates, beyond the strata of material containing tailings, across the imparted movement of the material. . . . It obtains the same result

as complainant's process, in the same way. Although carried on by a mechanism very slightly different from that used by complaints, it is clear that it is nothing more nor less than complainant's process." *Gulf Smokeless Coal Co. v. Sutton*, 3 U. S. P. Q. 86.

"In a generic process patent. . . . In a patent like Bradley's the claim should be as broad as the invention and, even if unnecessary and unreasonable limitations are incorporated in the claims, the court should interpret them liberally and not permit a defendant to escape who reaches the same result by analogous means, though he may employ additional elements and improve mechanical appliances." *Electric Smelting & A. Co. v. Pittsburgh Reduction Co.*, 125 Fed. at 937.

"No process patent is infringed, where any one of the series of acts which constitute the process is omitted by the supposed infringer, unless some equivalent act is substituted for the one omitted." *W. Bickford Co. v. Merrill*, 268 Fed. at 541, quoting Walker on Patents.

## II. Of Infringement by an Improvement

"Another ground on which the defendants argue that they do not infringe the patent is, that they do not, in their process, use water alone in admixture with fat, but use also some portion of lime. . . . It is unnecessary to determine what precise part the lime used by the defendants plays in their process . . . whether . . . it saponifies the fat to a certain extent, leaving the remainder to be acted upon by the water alone . . . or whether . . . the lime produces a more perfect and active commixture. . . . The introduction of an improvement gives no titles to use the primary invention upon which the improvement is based." *Tilghman v. Proctor*, 102 U. S. at 731, 732.

"A new idea may be grafted upon an old invention, be distinct from the conception which preceded it, and be

an improvement. In such case it is patentable. The prior patentee cannot use it without the consent of the improver, and the latter cannot use the original invention without the consent of the former." *Smith v. Nichols*, 21 Wall. 118, 119.

"The question at issue, then, is whether the defendant has merely modified the complainant's process by adding some sulphate of alumina to its first bath, or whether . . . it . . . uses the bichromate of potash merely for coloring. . . . The defendant 'does not use the process any the less because he uses something in addition to the process.' . . . Infringements is not averted by a mere addition to the patented process." *Ford Morocco Co. v. Tannage Patent Co.*, 84 Fed. at 645, 646, quoting *Lalance and Grosjean Mfg. Co. v. Habermann Mfg. Co.*, 53 Fed. 380.

"Defendants have increased . . . the quantity of ammonium chloride, and they have brought into it calcium carbonate. . . . It is claimed by defendants that this ingredient modifies the action of all associated elements, producing a novel process. . . . The dough can be withheld from the oven for a long time. . . . The calcium carbonate neutralizes the excess of acidity. . . . These theories as disputed. . . . Nor are we impressed with the contention that the larger proportion of ammonium chloride. . . . Produces a formula that is chemically different in its workings." *Beyer Co. v. Fleischmann Co.*, 15 Fed. (2) 466.

"In manufacture there are formed four calcium arsenates—mono-calcium arsenate, di-calcium arsenate, tri-calcium arsenate, and the basic arsenate. The third salt, tri-calcium arsenate, but usually called calcium arsenate, is the salt of the patent. The first and second salts are soluble in water and readily decompose, forming arsenic acid, which injures plants and foliage. The patent deals with the problem of avoiding the formation of these undesirable and injurious arsenic salts or water solubles by

the use of electrolytes added to the solution at the time of reaction, which, the patentee says, will prevent the occlusion of these soluble arsenic compounds. The defendant, on the other hand, does not control or prevent these water solubles by the addition of electrolytes, as the patent teaches, but prevents them by means of temperature and agitation, which plaintiff recognizes, but says are unimportant and make slight difference. In this respect, the defendant's practices differ from the teaching of the patent. Again, the plaintiff, not only did not teach the necessity of the use of excess lime in the manufacture of calcium arsenate, but actually taught the contrary. . . . Defendant did not infringe." *Riches, Piver & Co. v. Nitrate Agencies Co.*, 25 Fed. (2) 861.

"Some few of defendant's blades, out of a package . . . did not disclose any hard temper beyond  $1/32$  of an inch below the bases of the teeth. . . . It is urged that they were accidentally made and unintentionally sold. But the owner of a patent is entitled to protection against the repetition of accidental infringements." *Thompson v. N. T. Bushnell Co.*, 96 Fed. at 243.

"In some instances the workmen have been careless, and have inserted tar paper or other separating substances nearly through, or completely through, the filling. . . . An injunction against him to prevent carelessness on the part of his employees is necessary." *Davey Tree Expert Co. v. McCarthy*, 283 Fed. at 137, 138.

"The Luther patent cannot extend to the mere use of a catalytic agent (if there is one) inevitably developed as incidental to a familiar manipulation of the old materials and as contrasted with the deliberate addition of a new element, in full catalytic action as soon as added. . . . Infringement by the second process depends upon what is claimed to be an accidental or inadvertent use of an added catalyst. . . . Defendant did not buy this arsenic acid in the market as and for a pure article. It was the manufacturer. . . . It was not necessary that any of these im-



purities should be found, in more than a trace, in the arsenic acid; the fact that they were so found might be the result of intention or might be the result of inadvertence and a desire to save the expense of careful elimination. The record is satisfactorily convincing that in the defendant's second process this .88 per cent. of catalytic agents performed a substantial function in accelerating the reaction. This was sufficient to make out infringement of the Luther process. . . . We think it unnecessary to decide whether the presence of these impurities should be attributed to inadvertence, as defendant claims, or to what was at least a willing carelessness, as plaintiff claims. Defendant was under obligation, created by the patent and emphasized by the decree of this court, to see to it that no added catalytic agent crept in." *Toledo Rex Spray Co. v. California Spray Chem. Co.*, 30 Fed. (2) 496, 497.

"The respondents allege in their answers that the letters or figures upon the type-blocks are not reduced in any manner 'so as to remove rough edges, or to produce a flat surface' . . . by the respondent's process, the result which they attain is generally accomplished without planing, filing, or reducing the depth of the type. . . . Metallic elements . . . often require some 'fitting' . . . and the court is not satisfied that any thing more is done by the respondents . . . in the use of their process, than what properly falls within that rule. . . . No such act can be regarded as an infringement of the complainant's patent." *Hudson v. Draper et al*, 4 Fish. 256.

"The argument is pressed by the defendants that the good results they experience in casting copper tubes are due to the use of flux in the molten metal, which they say acts chemically; to better sand for cores; or to whitening for covering the cores. We may admit all these things to be improvements, and yet there is infringement, if they use, in connection with these things, the method



of distribution first pointed out by Adams." *Adams v. Bridgewater Iron Co.*, 26 Fed. at 328.

"The claim . . . in referring to the material to be treated, mentioned only straw, but the object of the claim was to secure a monopoly of the process, not to enumerate the materials to which it might be applied. . . . The specification speaks of 'straw or such other fibrous matters,' of . . . 'straw or fibrous substances' . . . and it uses other similar forms of expression. . . . It would . . . be too narrow a construction of the patent to hold that it is for a process applicable only to straw or other similar vegetable substances and not applicable to vegetable substances generally requiring like treatment for the use mentioned." *American Wood Paper Co. v. Fiber Disintegrating Co.* (Wood Paper Patent), 23 Wall. at 606, 607.

"The first claim is a claim to the electro-deposition of nickel . . . provided such solution is so used as to be free . . . from the presence of potash, soda, alumina, lime, or nitric acid, or from any acid or alkaline reaction. . . . The defendants used solutions which were free . . . otherwise than as such solutions had in them the sulphate or the chloride of potash or soda . . . had no . . . effect to cause free potash or soda to be present. . . . If the introduction of such sulphates or chlorides is otherwise of any benefit their use is but an improvement, and the invention of the patent is availed of, notwithstanding their introduction." *United Nickel Co. v. Harris*, 17 O. G. 325, followed in *United Nickel Co. v. Manhattan Brass Co.*, 16 Blatchf. 68.

"It makes no difference that the plaintiff may have found a paste . . . more suitable . . . because the only question is whether the paste described in the patent will make a horn answering the definition of the claims." *Abrahams v. Universal Wire Co.*, 10 Fed. (2) at 842.

"The defendant has infringed . . . by the use . . . of a solution . . . free from . . . any acid or alkaline re-

action. . . . I do not overlook the fact that defendant's solution contained one one-thousandth part of tartrate of ammonia, and one eight-hundredth part of ammonia. . . . The first was an inert substance, and the second would be, and was, speedily eliminated from the solution in use, by evaporation." *United Nickel Co. v. Keith*, 5 O. G. 272.

"To substitute a chemical substance for another which is known in the art as the equivalent or which by its chemical action performs similar functions does not avoid infringement. . . . Even if defendant had been the first to use phosphorus or 'paint' as an element which bettered the patentee's method, infringement could not be avoided simply on that ground." *Malignani v. Hill-Wright Electric Co.*, 177 Fed. at 433.

"There is a presumption that a process or apparatus of a later patent does not infringe the process or apparatus of an earlier patent. . . . But . . . where the patentee has made a primary invention of a new and useful process or apparatus which accomplishes a result never before produced by such a process or machine, the presumption that a process or apparatus of a later patent on the same subject is for a subordinate improvement or modification of the primary invention and hence subject to an infringement of the earlier patent which secures it, is at least as strong as the presumptions of the general rules." *Century Electric Co. v. Westinghouse E. and Mfg. Co.*, 191 Fed. at 363.

"During all this period . . . Goodwin's application was lying in the Patent Office. We are unable to see how the Reichenbach patent anticipates or limits the claims of the Goodwin patent. It may be that his process was an improvement on Goodwin and that during the life of his patent he was entitled to the exclusive use of such improvement, but it can have no retroactive effect. It cannot destroy or limit an invention which was in esse before his invention was conceived. . . . The invention is one of more than ordinary merit and the claims should

not be so construed that any one may safely infringe who has wit enough to substitute equivalents for the elements named in the patent and to add or subtract therefrom, so long as the menstruum contains a hygroscopic and a non-hygroscopic element, the latter being a solvent of nitrocellulose and of slower volatility than the former. If the defendant uses a process having these elements, it matters not what else it uses or that its method is an improvement on the patented method. . . . Goodwin was the first to produce a transparent sensitive pellicle for use in roller cameras . . . his patent is entitled to a liberal construction. Doubts should be resolved in its favor and care taken not to confuse the art at the date of issue with the art as it existed at the date of the application." *Goodwin Film and Camera Co. v. Eastman Kodak Co.*, 213 Fed. at 235, 236, 238.

"The passage of each increment, after it is cast, between the tightly confining walls of a cavity of such length, may burnish or dress the side surfaces of defendant's product. While this step of defendant's process is not present in plaintiff's process, yet the defendant, having used each step of plaintiff's process, may not, by the use of an additional step, escape the charge of infringement." *Lanston Monotype Mach. Co. v. Pittsburgh Type F. Co.*, 276 Fed. at 927, 928.

"The essential feature of the patented process is the raising of the filament of the lamp to intensive incandescence in an attenuated atmosphere, at a time when the vapor of a suitable solid substance has been introduced into the bulb to effect the precipitation of its gaseous contents. . . . The defendant does not avoid infringement by merely transposing the steps of the process. . . . No step was omitted, nor was any new one introduced." *Malignani v. Germania Electric Lamp Co.*, 169 Fed. at 301.

"Counsel for the Franklin Company contend that the word 'treatment' used in the claims may be construed to

mean the introduction of formalin to kill the micro-organisms, and that Jensen-Salsbery employs that step. But the claims are not subject to this construction. The second step in each claim is the addition of a reagent to kill the micro-organisms, and the third step is 'treating the resulting product.' The 'resulting product' clearly relates to the product after the micro-organisms have been killed." *Jensen-Salsbery Laboratories, Inc. v. O. M. Franklin B. S. Co.*, 22 U. S. P. Q. 141.

"The defendant passes the paper under a roller submerged in a bath of paraffine, thus applying the wax to both surfaces of the paper, and then passing it through two squeeze-rollers located over the vat. The defendant may not observe the same order in the various steps of the process that we find described in the reissued patent, but it does not follow that the processes are different because the various steps do not succeed each other in precisely the same order." *Hammerschlag Mfg. Co. v. Baneroff*, 32 Fed. at 589.

"Defendant first rolls four or five layers of paper on the mandrel fastening them with a sticker and then ties the wire around this paper and the mandrel. Thereupon one layer of paper is fed in and while the first coil of wire is wound thereon, the coil and paper are shellacked. Then, ordinarily, three layers of paper are fed in and another winding begins. . . . Whether or not, at the time of cutting, the upper layer has been completely wound and whether or not it is intended thereafter to wind additional layers so as to produce in the end a coil of only two or of more layers of wire, is immaterial; in either case there is infringement of plaintiff's method of producing the coil by the use of a single core." *Dudlo Mfg. Co. v. Varley Duplex Magnet Co.*, 253 Fed. at 747.

"A change in the form or the location or sequence of the elements of the patent will not avoid infringement where they are all employed to perform the same functions, unless form, location, or sequence is essential to



the result or to the novelty of the claim." *Los Angeles Lime Co. v. Nye*, 270 Fed. at 160.

"The Howell process saves time, material and the use of skilled labor. It makes better and cheaper lamps and more of them, avoids discoloration of the bulbs. . . . The Circuit Court dismissed the bill on the ground of non-infringement, holding that the process calls for a fixed series of steps. . . . We are constrained to think that this is too strict an interpretation of the claims. . . . It was necessary for the patentee to state the various steps taken. When he reached the two steps in question he was compelled to mention one before the other although he might have reversed the order. . . . In other words closing before incandescing is not of the essence of the invention. . . . The defendant does not avoid infringement by merely transposing the steps of the process." *General Electric Co. v. Hill-Wright Electric Co.*, 174 Fed. at 998, 999.

"The defendant cannot escape the charge of infringement by the circumstance that it first abnormally dries the wet pulp, whereas the plaintiff first substantially or comparatively dries it, and then after the pulp and the camphor have been mixed, expels all the remaining moisture. By such an alteration of an important and valuable process infringement is not avoided." *Celluloid Mfg. Co. v. American Zylonite Co.*, 28 Fed. at 196.

"The defendants admit that the process has produced a revolution in the manufacture of flour; but they attribute that revolution to their improvements. It may be as they say, that it is greatly due to these. . . . But it cannot be seriously denied that Cochrane's invention lies at the bottom of these improvements, is involved in them, and was itself capable of beneficial use, and was put to such use. It had all the elements and circumstances necessary for sustaining the patent, and cannot be appropriated by the defendants, even though supplemented by and



enveloped in very important and material improvements of their own." *Cochrane v. Deener*, 94 U. S. at 787.

"The defendant . . . denies infringement, on the ground that it does not impress the matrix of the patent 'into a tablet of suitable material,' because it interposes a process of making an additional matrix, not included in the patented process, and impresses this additional matrix into the material. In effect, it claims that although it employs the first processes of the patent to make the matrix and the last process of the patent to make the commercial record, yet because of the interposition of a superfluous additional duplicating process it escapes infringement. . . . Such a claim is without merit." *American Graphophone Co. v. Universal Talking Machine Mfg. Co.*, 151 Fed. at 601.

### III. Selling Product No Infringement of Process Claim

"A process patent is not infringed by selling the product, and the vendee of a product which has been made in infringement of a patented process cannot be held liable to the patentee, or in any extent to be an infringer." *American Graphophone Co. v. Gimbel Bros.*, 234 Fed. at 368. See also *In re Amborg Trading Corp.*, 75 F. (2) 826.

"The broad proposition that the vendor of a product which has been made in infringement of a patented process is an infringer, or liable to any extent to the patentee, is untenable and does not require discussion. The patentee's remedy is against the manufacturer. . . . The patent . . . is one for a process, and not for a product. It describes a method of producing the Welsbach mantel . . . to render it sufficiently hard and resistant to allow of transportation . . . and any person is at liberty to vend or use the invention without accountability to the patentee, except he also be the manufacturer." *Welsbach Light Co. v. Union Incandescent Light Co.*, 101 Fed. at 131, 132.

“The patent is for a process of manufacturing furniture nails. . . . The bill simply alleges that defendant has made, used, and sold certain furniture nails. The patent being for a process, and not for a product, the use or sale of the product (furniture nails) is, of course, not an infringement. . . . Nor is the making of furniture nails, even of exactly the same kind as that made by the patented process, unless all the steps of the process are used.” *American Solid L. Button Co. v. Empire State Nail Co.*, 50 Fed. at 930.

“The patent in suit is for a process, not for the article produced. A patent for a process is not infringed by selling the product.” *National Phonograph Co. v. Lambert Co.*, 125 Fed. at 389.

#### **IV. Of the Effect of the Disclosure**

“It is no defense to a charge of infringement of a process, a machine or a combination clearly described and claimed in a patent that it, or some part of it, was misnamed therein, or that the infringer has called it by a name different from that applied to it by the patentee. Patents protect new and useful processes, machines and combinations, whatever their names, when they are clearly described and claimed in the specification.” *Century Electric Co. v. Westinghouse E. and Mfg. Co.*, 191 Fed. at 366.

“No process patent is in theory either helped or harmed by the excellence or worthlessness of the disclosed apparatus by which it is illustrated.” *Petroleum Rectifying Co. v. Reward Oil Co.*, 260 Fed. at 182, quoting *Buffalo Forge Co. v. City of Buffalo*, 255 Fed. at 83.

“We fully agree . . . there is . . . no infringement. . . . The argument has been much pressed that Kennedy’s disclosure reveals nothing useful, and is not operative. That it possesses no practical utility is fully proven. The scheme might be called one of hope or

aspiration; but the device will operate in a laboratory at least, and we do not think the patent can be struck down as inoperative in the sense of the patent law. . . . No practical use has been made of this invention." *Electro-Dynamic Co. v. United States Light and H. Corp.*, 278 Fed. at 85.

"Appellant now admits that it never used the formula . . . upon which disclosure the patent was issued. Moreover, it never used clay at all, which in its formula consisted of nearly 40 per cent of the entire mass, and further admitted that it 'did not consider clay as suitable for anything of that kind.' Experiments . . . disclosed the futility of using this material. . . . This . . . must defeat the patent." *American Gas A. Co. v. Prest-O-Lite Co.*, 9 Fed. (2) at 785, 786.

"He said the maximum time allowed should not exceed three seconds from the time the tinned bronze shell was lifted out of the tin bath, placed into the machine, and the Babbitt poured into it. He also fixed the time within which dangerous oxidation occurs as the fourth, fifth, or sixth second. The evidence shows a lapse of 25 seconds between the removal from the solder bath and the introduction of the Babbitt metal in defendant's practice. The steps detailed on cross-examination indicate that probably that much time was consumed. That would be 15 to 18 seconds after dangerous oxidation would occur, and 22 seconds after the maximum time fixed by Olsen. Obviously, plaintiff could have no protection against a practice that occupied a time far beyond the time of dangerous oxidation. Such a practice could not have infringed." *American Bearing Corp. v. Milwaukee Die Casting Co.*, 32 Fed. (2) 23.

"Seeing then, that the specification makes the mechanical rotating mixer an essential foundational step in his process, and that no other process . . . is disclosed. . . . The third question, namely: Does the defendant make use of this process? must be answered in the negative.

. . . They simply do not use any mechanical rotating mixer. . . . Had no rotating mechanical mixer been shown by Deppe in his specification, the very basis on which his patent was sought for would have had no existence." *General Motors Corp. v. Deppe*, 21 Fed. (2) 46.

"It cannot be conceded that the patentee, who has devised means to control the speed of a plunger at any part of its stroke, is entitled to prevent others from controlling the speed of the plungers by all means whatsoever, and to confine them to one speed throughout the cycle of the plunger." *Hartford Empire Co. v. Hazel Atlas Glass Co.*, 4 U. S. P. Q. 205.

"Convinced . . . that the defendant's use of identity of ingredients and identity of means, with those which alone are specified in the recited claim, that by such use they obtain identity of result, namely, a synthetic billiard ball, 'hard, insoluble and infusible,' a product first disclosed by this patent, we are justified in adjudging . . . valid and infringed." *Bakelite Corp. v. Brunswick-Balke-Collender Co.*, 18 Fed. (2) 387.

"The expression in the claim, 'about half of its depth,' may properly be given a somewhat liberal construction . . . namely . . . that the grit shall extend into the asphalt for a sufficient distance, so as to be held fast, and still leave a sufficient portion of it projecting, so as to provide a clutch or bond for the final coating of plaster. . . . As a matter of fact they may be imbedded to a greater depth than the normal thickness of the asphalt coating." *Vortex Mfg. Co. v. Ply Rite Contracting Co.*, 2 U. S. P. Q. 161.

"It consists of a process of frying . . . and then entirely removing the absorbable grease . . . by the use of ether, alcohol, butane. . . . Appellant manufactures potato chips, cooking them in grease, and then they are treated in a centrifugal machine in the presence of hot air . . . throwing off the surplus fat . . . drains the surface grease. . . . Appellant is not practicing by any rule of



equivalents the removal of grease by the use of solvents . . . does not infringe.” *Dernell Potato P. Co. v. Snelling*, 4 U. S. P. Q. 193, 194.

“Vaporization can connote the mere generation of vapors in a body of liquid. The adoption of this construction would result in a finding that the claims are invalid because they involve a departure from the specification of the patent. On the other hand vaporization may connote the generation of vapors on a body of liquid accompanied by the liberation or separation of the vapors from the body of the liquid. The adoption of either of the latter constructions will not result in destruction of the claims. . . . It . . . is the desire of the court . . . to endeavor to sustain rather than defeat the claims.” *Universal Oil Products Co. v. Winkler Koch Engineering Co.*, 21 U. S. P. Q. 440.

“Claim 2 clearly includes two treatments. The first is a treatment with formalin to kill the organisms. The second is a treatment to obtain the organisms in suitable form for immunizing use . . . some other treatment than the formalin treatment to kill the organisms. Words used in a certain sense in one part of a contract will be deemed to have been used in the same sense in another part, unless the context indicates otherwise. . . . When the specification and claims are read together for the purpose of ascertaining from the entire contract the real intent of the parties, we think the construction is unavoidable that claims 1 to 8 include a third step, namely, a concentration treatment to put the organisms in suitable form for immunizing use. . . . To broadly construe the claims to cover any treatment by which the organisms could be obtained in suitable form for immunizing use, would render the patent void for two reasons. 1. The claims would define the third step in the process only by the result to be obtained and not by the process for producing it . . . and would be functional. . . . 2. The specification would not describe the invention in such full, clear and exact



terms as to enable any person skilled in the art or science to which it appertains to make, compound and use it, and the claims would not be sufficiently definite and certain to enable such a person to determine with certainty what the patentee claims as his invention." *Jensen v. Franklin*, 24 U. S. P. Q. 2.

"The aim of Benjamin's process as specified in his patent was 'first, to remove the major portion of the normally contained moisture in the tobacco, and second, to develop the color and aromatic properties of the tobacco.' Now these two things which had two or three years before been done by the farmer, the defendant does not repeat. It takes the farmer's cured and dehydrated tobacco, and two or three years later, when it is aged, subjects it to another operation, the object of which is by heat and light treatments successively to lessen the deleterious effects of certain objectionable constituents and certain injurious elements, and in doing so defendant uses arc lights which develop ultra violet rays. Whether it has that effect or no, we are not here concerned with. The simple fact that in such operations defendant is not recuring, or re-hydrating, or repeating the work done by the farmer and which was so satisfactorily done by him that the defendant bought his product. Whatever merit there is in this subsequent treatment by the defendant, Benjamin neither disclosed it in his specification nor embraced it in his claims. In Benjamin's process the use of electricity is at a heat of 220, 225 F. In defendant's process electric light is used at a temperature of 135 to 140." *Consumers Tobacco Co. v. American Tobacco Co.*, 18 U. S. P. Q. 159.

"The evidence is that no water is added to the graphite powder and corn syrup in the defendant's paste. . . . The specification of the patent gives a formula for making the plaintiff's paste. . . . When claim 1 of the patent is read in the light of this formula it is evident that the small percentage of water, which . . . syrup ordinarily con-

tains . . . is not to be considered in determining whether a mixture of graphite powder and . . . syrup infringes the claim . . . for such a paste clearly falls within the scope of rejected claim 4 and the plaintiff is estopped from claiming a construction of claim 1 coextensive with rejected claim 4." *Key Boiler Equipment Co. v. Coleman*, 3 U. S. P. Q. 285.

"The molten metal in the mold may become attenuated by the withdrawal movement, yet no complete breach therein occurs. . . . Unless the stream of metal in defendant's machine is broken in its mold, there are not at any time two masses, bodies, or increments of metal to unite 'by fusion.' . . . Not infringed." *Lanston Monotype Mach. Co. v. Pittsburgh Type F. Co.*, 276 Fed. at 929, 930.

"Infringement of the claim cannot be avoided by introducing such small quantities of any of the injurious substances named by Adams as will produce no practical injurious effect. . . . In attempts at nickel-plating before, acids had been used which were known solvents of nickel. Adams used those acids to prepare his solutions. When he speaks of acid reaction in his specification . . . he must be regarded as referring only to the acids he had spoken of as used to clean . . . or as solvents. . . . Hence, the acid reaction spoken of by Adams includes only the mineral acids. . . . The actual chemical composition . . . is unimportant. The only material point was its freedom from the injurious constituents indicated by Adams. . . . The defendant's solution is an equivalent. . . . The use of nitric acid as a solvent is avoided." *United Nickel Co. v. Pendleton*, 15 Fed. at 744, 745, 746.

"As patentee used the words, we think there was a welding of the confined portions of the arms. Both portions of the arms were heated to a welding heat. The driving head made a block of the lower portion of the arms. Where the inner wall of the arms came in contact with the outer wall of the block, all heated as de-

scribed, there was a 'welding,' as that term is used in the patent; that is to say, molecules of one part of the arm mingled with and attached themselves to molecules of the outer and separated part of the arm. . . . It accomplished the same result by precisely the same processes." *American Steel Foundries v. Damascus Brake Beam Co.*, 267 Fed. at 577.

"The word 'simultaneous' or 'simultaneity' is not used with reference to the operation of casting the second sheet on top of the first, the only suggestion as to this second sheet is . . . in the sixth, or second process, claim, 'simultaneously forcing wire upon said sheet and forming a second sheet of glass upon said first sheet'; and in the seventh, or third process, claim, 'simultaneously with the formation of said sheet forcing wire on said sheet and forming a second sheet upon said first sheet.' . . . There is no suggestion of simultaneity, except what is implied by the introduction of the wire in advance of the leading roll. . . . It is perfectly clear that this all-important step . . . is not practiced by the defendant." *Highland Glass Co. v. Schmertz Wire Glass Co.*, 178 Fed. at 968, 969.

"It is stated that upon exposure to the air the celluloid shrinks somewhat, which causes the portions which have been forced into the inclined grooves to act as clutches or hooks, grasping the metal with immense power, and holding the slab firmly by a tension towards the center against any movement or force, either lateral or upward. Then follows the significant declaration, 'Thus is the prime object of the invention accomplished.' . . . 'The essence' of this step of the invention being to affix the slab upon a plate immovably 'by combined heat and pressure and subsequent cooling.' The subsequent cooling is thus declared to be of the substance of the invention. . . . The defendants not only dispense with all grooves, apertures, and elevations . . . but they employ a force . . . entirely different. . . . The two processes differ in principle."

Celluloid Mfg. Co. v. Arlington Mfg. Co., 52 Fed. at 743, 744.

“ ‘The Byerley process consists in the treatment of petroleum tar in such a manner which will, when agitated by air, result in the production of asphaltic products.’ . . . As to the further contention . . . that respondent avoids infringement by using Texas oil, which it is alleged is asphaltic oil to begin with, we are of opinion that, assuming this to be the case, the respondent by the use of Byerley’s process still obtains Byerley’s asphaltic product; . . . in that it agitates by air, and uses a pitch-forming, non-coking temperature, and obtains a product of artificial asphalt.” Byerley v. Sun Co., 184 Fed. at 456, 457.

“As to defendant’s contention that the result of their use of bentonite, is to produce a water tightening and not a water-proofing in the finished product, and, in support of this contention, that they use a different agent for waterproofing, all that need be said is that defendants have followed the process of the patent with substantial closeness. . . . One does not escape infringement by practicing invention imperfectly.” Kansas City S. Ry. Co. v. Silica Products Co., 8 U. S. P. Q. 481.

“Claims . . . were not infringed by the defendant’s process . . . as by these claims the patentees have expressly limited themselves to ‘grinding or cutting a paper sheet as their means for forming relatively thin sections’; that ‘the wet pulp upon which the defendant operates could not be ground or cut, any more than the paper sheet upon which the patentees operate could be thinned by suction’; . . . the prior art forbids a construction of the claim ‘which would cover the production of a paper sheet having thin hinged sections in it obtained by any removal of a part of the stock during or simultaneously with the course of manufacture, at any stage prior to sizing.’ ” Berkshire Hills Paper Co. v. Byron Weston Co., 262 Fed. at 686.



“The real invention of the patentee consisted in so locating his coil that it would operate directly through fluctuations . . . an improvement on the prior art in its capacity for use with generators having a flat characteristic, and that defendant . . . has secured the same advantages. . . . In view, however, of the failure of the patentee specifically to point out, illustrate, or broadly claim such location, we cannot so read it into the patent as to embrace defendant’s construction. . . . While a patentee is entitled to all the beneficial uses of his invention when the property or function is inherent in the invention or is described or claimed by him, yet . . . where such change or function is neither described nor claimed, and especially where other changes are described and insisted on as essential and specifically claimed, it is significant proof that the change which has not been disclosed by him to the public is not his invention.” *Electric Storage Battery Co. v. Gould Storage Battery Co.*, 158 Fed. at 617.

“Even though the defendant’s wood alcohol be methyl alcohol, and an article known by that name before the plaintiff’s invention, it cannot be held that the plaintiff discovered the usefulness of it in conjunction with camphor to dissolve xyloidine, because his patent is expressly limited to that alcohol which is spirits of wine, and that is not methyl alcohol.” *Spill v. Celluloid Mfg. Co.*, 10 Fed. at 291.

“The fact that the inventors had used chemical resins in making the mixture does not limit the claims to ‘chemical resins.’ . . . If stearin pitch, used by the defendants, is not a ‘resinous body’ . . . there can be no infringement . . . , as I do not think that at the time of the filing of the application for the patent, or at the time of its issue, it was a well-known equivalent for resin, or a mixture of resins. . . . To infringe . . . the alleged infringer must use the ingredients claimed to be those used in the process, or used to form the product, or a ‘well-



known' equivalent therefor. It is not sufficient that tests or experiments have shown that some substance not claimed, and, at the time the patent was applied for and granted, not known, to be an equivalent, had proved just as good or just as efficient in the combination as a substitute for the ingredient claimed." *Standard Paint Co. v. Bird*, 175 Fed. at 350.

"The principal contention arises over the finding of the master that the 'fiber white' used by the defendant was talc. The complainant cannot succeed upon the theory that 'fiber white' was an equivalent for talc, for it was not known at the date of the patent. If, however, it was talc in fact, the principal obstacle in the complainant's path is swept away. . . . The evidence adduced to establish the identity of the checks analyzed by Prof. Chandler . . . was sufficient to sustain the master's action." *Welling v. LeBau*, 34 Fed. at 42, 43.

"This Welsbach patent covers a pioneer invention, and is entitled to that liberal application of the doctrine of equivalents which is usually accorded to such patents. . . . The claim in suit mentions only iron as the nonrare earth metal. . . . When, as here, a pioneer patentee claims an alloy of one or more rare earth metals with one or more nonrare earth metals, he is not restricted to named varieties of either, unless he has himself restricted his claim by something in his specifications, as Welsbach did, on the rare earth side of the combination, by the statement that in his alloy cerium is an essential. . . . Welsbach nowhere intimates that iron is essential; on the contrary, he states his invention is the alloy of cerium 'with certain other metals, in particular iron.' We are satisfied that the 'equivalency' of other metals with iron is to be found, not in their chemical structure, but in their functional efficiency when combined with cerium in a metallic alloy. . . . We are satisfied from the record that . . . each and every nonrare earth metal is a fair equivalent of iron in the compound of this patent." *Trei-*

bacher-Chemische Werke, etc., v. Roessler and Hasslacher C. Co., 219 Fed. at 211, 212, 213.

"I do not think Schmertz was confined to the means described in his specifications. His claims cover any means for introducing the wire. It was more than an improvement, as he invented a new plan. His invention, therefore, covers more than the precise means described, of which defendant's feed device is an equivalent, especially as it uses Schmertz's plan through part of the process." *Schmertz Wire Glass Co. v. Western Glass Co.*, 178 Fed. at 992.

"The facts that the defendants apply the heat first above and afterwards from below, while the plaintiff applies the heat first from below and afterwards from above, and that the sides of the defendant's chase or mould are not, like those of the plaintiff's made hollow for the purpose of containing steam, do not constitute any substantial difference in the process used by both parties." *Celluloid Mfg. Co. v. American Zylonite Co.*, 31 Fed. at 911.

"The forcing of the air current upward through the screen and film of meal carried on it and against the downward fall of the meal, instead of forcing them through the bolting-cloth in the same direction with the meal, is also a mere matter of form, and does not belong to the substance of the process. The substantial operation of the currents of air in both cases is to take up the light impurities and bear them away on the aggregate current through the open flue, and thus to separate them from the middlings. This, too, may be an improvement on Cochrane's method; but it is only an improvement." *Cochrane v. Deener*, 94 U. S. at 787.

"The answer proceeds to say. . . . The torpedo is then placed . . . and is exploded. No water or other fluid is put in the well . . . though it may and sometimes does happen that there will be fluid in the well above the point at which the explosion is effected; but it will be only oil,

or salt water and oil . . . at points below the casing. . . . It will be observed he does not deny that water tamping always attends his process . . . and thus he has succeeded in increasing the production of oil, and obtaining the results which the Roberts process secures. . . . In short, the argument is that . . . his process is not the same as that of Roberts, which requires the well to be entirely filled. . . . At the time when the Roberts patent was granted oil wells were comparatively shallow . . . some were not more than from 40 to 70 feet deep. . . . Later, the depth of the bore has been greatly increased. . . . Now any operator . . . secures all the tamping needed by a column of fluid wholly below the casing. . . . He would be no skilful operator if he did not perceive that Roberts intended no unnecessary filling. . . . The patent has been infringed." *Roberts v. Schreiber*, 2 Fed. at 865, 866, 867, 868.

"The question raised by this claim is as to whether it is for a two or a three step process. . . . If the claim is for a three-step process, the Budd does not infringe. . . . The prior art patents . . . do not specify that the indentation is to be made first and the hole afterwards; but . . . metal workers well knew that, if a hole was to be driven through a portion of a piece of metal in which an indentation was also required, good practice demanded that the making of the indentation should precede, and not follow, the piercing of the hole. . . . If you had a hemispherical indentation into which you wished to punch a hole in a particular direction, you would apply your punching tool to the point at which the hole was to be made in such a way as to approximate to a right angle as nearly as possible." *Wire Wheel Corp. v. Budd Wheel Co.*, 288 Fed. at 311, 312.

"The paint, before drying, was apt to be taken up by the rollers, thus leaving the cloth imperfectly painted. The improvement . . . consists in 'applying a liquid solution or compound' to the rollers. . . . The specifica-

tion states that 'any liquid solution or compound which will adhere to the rollers, and at the same time repel paint,' will answer, but a solution of soap in water has been found preferable. . . . The defendant employs metal rollers, through which a stream of water is passed to chill their surfaces and harden the constituents of the paint, so as to prevent adhesion; and at times the water of condensation arising from the atmosphere of the room settles upon these rollers sufficiently to assist in preventing the adhesion of the paint. The question . . . is whether this method . . . is an infringement. . . . The patentees were not the first to employ similar mechanical means for a cognate use. . . . Ritchie describes . . . impregnating felt with resinous material . . . passes to cooling cylinders, . . . moistened by rotating in water. . . . Metzler describes . . . applying glue . . . to muslin . . . passing to drying drums, having . . . cold water applied. . . . The defendant does not infringe." *Wickwire v. Wire Fabric Co.*, 41 Fed. at 37, 38.

"There is nothing whatever in the defendant's apparatus or method which infringes in any way. . . . Upon the Rembert process or method of utilizing the alleged temporary suspension of elasticity in cotton for the purpose of forming a compressed bale. The defendants do not pretend by their machine to suspend the elasticity in the cotton as or after it passes through the rollers and before baling; but the elasticity or expansion is afterwards reduced and confined by the process of forming into a cylindrical bale." *Rembert Roller Compress Co. v. American Cotton Co.*, 129 Fed. at 369.

"Defendant's structure does not infringe. . . . It is not a lamellar vessel, nor has it a lamellar cap or end, in the sense of this patent. Its cap or end is not made by sweating together a number of caps coated with a soldering metal." *Matthews v. Iron Clad Mfg. Co.*, 21 Fed. at 646.



“Defendant’s material, which is a manufacture of earth and shellac . . . is not the equivalent of hard rubber, and does not infringe the patented invention, for a method of protecting a matrix against the fumes of sulphur and for the product resulting only from such method, for the fundamental reason that it does not contain sulphur, which is the essential ingredient of hard rubber” *Victor Talking Machine Co. v. American Graphophone Co.*, 151 Fed. at 605, 606.

“It is evident that the claims are limited, both in terms and by the substance of the patentee’s explanation of his invention in the specification, to problems that arise in the use of hard metals . . . with which the defendant does not have to deal. . . . The bill will be dismissed.” *Cartridge Machinery Corp. v. National Collapsible Tube Co.*, 13 Fed. (2) at 861.

“It is also urged for the appellants . . . to limit the method of the patent to one in which perchloride or persulphate of iron is used as a coagulant. If these coagulants only, instead of coagulants ‘such as perchloride or persulphate of iron,’ had been mentioned in the description of the invention, there would be much force in the argument. . . . The claim covers the use of any coagulant having similar properties to the salts of iron. . . . Infringement of the claim by the defendants is established, although they use alum.” *Schwarzwalder v. New York Filter Co.*, 66 Fed. at 158.

“A careful examination of the whole specification shows that the important improvement covered by the patent was the production of a counter with converging front ends, or with a widened center and contracted front, by means of two pairs of molds. . . . To . . . so broaden it as to make it cover a method or process where this feature is absent, would be unwarranted.” *Simonds Counter Mach. Co. v. Young*, 35 Fed. at 518.

“Infringement appeared. . . . Appellant denies ‘overliming.’ . . . The ‘excess of lime’ required by the Chute



process resulted in the development of a 'yellow color.' Certainly Chute had a right to define the terms he used in his public letter and we are not at liberty to ignore his definitions. Witnesses for appellant admitted that the color of its distillate after liming 'was a light orange color' . . . which in our opinion indicated an 'over-liming.''' *Wisconsin Chemical Co. v. Chute*, 261 Fed. at 92.

"The defendant's experts express the opinion that the Wittenstrom method is a remelting process. . . . But I discover no good reason . . . for imposing such limitation. . . . The defendant insists that ingots . . . are not castings. . . . Defendant contends that the addition of the aluminum to the metal in the mold . . . is not within the claim. . . . The defendant company further maintains that its present practice is not within the claim because the quantity of aluminum it employs is so very small . . . two ounces of aluminum to a ton of metal. . . . The defendant uses aluminum in quantities sufficient to subserve its particular requirements, applies it substantially at the time and in the manner directed by the patent, and thereby obtains the good results specified in the patent to a substantial extent. . . . Infringement.'" *United States Mitis Co. v. Carnegie Steel Co.*, 89 Fed. at 347, 348, 349, 350, 351.

"The appellees assert that these processes are not infringements of the appellant's process, because the only reasonable construction of the appellant's claim is, that all the mother liquor in that gel is allowed to escape by evaporation, whereas the appellee's processes provide for the escape of a large part by filtration. In a highly technical sense it may be correct to say that the pressure of the grid causes an escape of some liquor by filtration, but it is quite apparent that the use of the grid does not change the process used by the appellant as to the portion of the gel that is undisturbed by the grid. . . . There was

infringement.” *American Doucil Co. v. Twin City Water Softener Co.*, 4 U. S. P. Q. 54, 55.

“It is strenuously claimed by the defendant that . . . its own products . . . do not infringe . . . because the Byerley process is limited to the manufacture of asphaltic products having a precisely defined solidity much in excess of defendant’s products. . . . The process patented and claimed by Byerley is described in his patent and is shown by the testimony to be a progressive one. . . . I construe this limitation as including any product so produced having a ‘body’ as distinguished from a liquid, and so construed each and all of defendant’s products infringe.” *Byerley v. Barber Asphalt Paving Co.*, 230 Fed. at 998, 999.

“The defendant, in carrying out its process, adds to its mixture of phenol and formaldehyde an amount of base largely in excess of the proportion called for by plaintiff’s claims, and . . . it subsequently neutralizes the whole of the base so added. . . . With respect to the ‘heat and pressure’ patent . . . the substance of the claims is found in the method of converting the initial product into the final and completed product. The patent does not disclose or claim a method divided into stages for accomplishing that result. . . . Since there is no disclosure of a reaction divided into stages . . . there is no disclosure of a reaction controlled by being divided into stages. . . . The defendant does not employ the process of the ‘heat and pressure’ patent.” *Bakelite Corporation v. Brunswick-Balke-Collender Co.*, 7 Fed. (2) at 700, 704.

“The claim . . . proceeds to state that the article is then to be removed from the press mold, and finally inserted in a separate mold, and blowed in, to form the body. . . . The method of the defendants does not conflict. They have adopted means, and very ingenious means, by which any necessity for removing the article from the press mold, and inserting it in a separate mold

is avoided." *United States Glass Co. v. Atlas Glass Co.*, 90 Fed. at 725.

"We do not think it a fair construction of the patentee's language to hold that it requires the heat to be raised in all cases to a degree only a little below the point of fusion. He does not attempt to give any more definite direction than that all parts of the wheel must be raised to the same temperature, suggesting in a parenthesis '(say, a little below that at which fusion commences).' . . . and the prescribed minimum is that degree where the heat of the different parts of the wheel is equal. Within those limits the degree is left to the judgment of the operator." *Mowry v. Whitney*, 14 Wall. at 646.

"In defendant's practice. . . . The aluminum of such mixture consists of flakes . . . folded over, as some are, they measure '7 $\frac{1}{4}$  one-thousandths of an inch.' Obviously the use of such thinly flaked aluminum for initial ignition is in purpose, action, and result the thermal . . . equivalent of Goldschmidt's finely pulverized aluminum. . . . It is equivalent to . . . causing them to offer more surface to the reaction. We are also of opinion that the vanadium oxide used in its mix by the defendant falls within the generic element, 'metallic compounds containing oxygen,' of Goldschmidt's claim." *Goldschmidt Thermit Co. v. Primos Chemical Co.*, 292 Fed. at 370.

"In his claim he confines himself to no specific acid. The appellant has found that by the use of diluted sulphuric acid the bleaching process can be as effectually accomplished as by the use of vinegar. But it does not thereby avoid infringement. It uses a weak acid within the terms of the claims." *Fullerton W. G. Ass'n. v. Anderson-Barngrover Mfg. Co.*, 166 Fed. at 450.

"During the period of at least one hour, which is occupied in emptying a pot, these additional stirrings do not occur more frequently than . . . 'two or three times,' whereas, to prevent the settling of the impurities, it would be necessary to agitate the mass almost continu-

ously. . . . The refinement of the greater part of the metal takes place after the disturbance caused by the stirring has ceased, and while the bath does 'stand' sufficiently long to permit the subsidence of impurities. . . . It makes no difference that the defendants, who thus refine much of their zinc, also, instead of entirely rejecting the impurities, combine them with other of their zinc, and of that combination compose some slabs of inferior quality. . . . The method used by the defendants is substantially . . . that described and claimed in the patent. . . . Infringement has been established." *Delaware Metal Refinery v. Woodfall*, 55 Fed. at 990, 991.

"The determination of the transverse line to define the part of the paper that is to be made into the bottom of the bag, which in the patent is effected by doubling over the part upon the body of the tube, is effected in the process of the defendants by the use of a presser plate, which marks the line without doubling back the part of the paper to be manipulated; and the order of making the final laps . . . is changed. . . . The making of a transverse line . . . according to the method of the defendant is an equivalent of the method of the patent . . . and the relative order of making the two final laps is a matter merely of expediency, and is stated to be so in the specification of the patent." *Union Paper Bag Machine Co. v. Waterbury*, 39 Fed. at 391.

"Scouring or scrubbing with acid . . . was one of the evils which the patentee wished to avoid. . . . Defendants now make the article which is said to be an infringement. . . . By this process the discoloration is removed by the application of acid, and then the surface is polished by the chilled rolls. . . . The defendant's process . . . omits a patented step, and in its stead includes one which the patentee intended to avoid. There is no infringement." *Cotter v. New Haven Copper Co.*, 13 Fed. at 235, 237.



“The art of printing in blended colors has been greatly cheapened by late inventions pertaining to the chromatic press, with which complainant’s invention has nothing to do. The only claim of these inventors is that they have devised a new and useful mode of printing those blended colors diagonally across the card, instead of printing them in bars parallel to the sides or ends of the card . . . defendants do not infringe, because they do not use all the complainant’s combination, and because they . . . work on a chromatic press without making any substantial changes in its mechanism.” *Goss v. Cameron*, 14 Fed. at 579, 580.

“These various differences prove an essential variation between the two processes . . . in the matter of oxidation especially the process of the later patent is in express disregard of the teachings and process of the earlier one. . . . To classify such use of compressed air as a practical equivalent for the oxidizing process practiced at the York Haven plant . . . carries no weight. . . . The claim of the plaintiff is that its patents, not its practices, have been infringed, and if . . . there has developed . . . a practice not set forth in any part of its patents, either descriptions or claims, and which is a contributing factor in the make-up of plaintiff’s product, infringement of the patents cannot be claimed, even if such extraneous practice is copied in every detail. . . . The patent in suit declares for the exclusion of oxidation, and oxidizing of any and all sorts may be practiced and employed with impunity.” *Robeson Process Co. v. Robeson*, 293 Fed. at 78, 80, 81.

“Perkins inserted a plug at the top of the casing . . . and on top of this pumped his mixed cement to the quantity desired. By the force exerted by the pump, the cement entering the casing forced the plug downward against the water remaining there, and, when sufficient cement had been pumped into the casing, another close fitting plug was placed on top of it, and, by use of the



pump, the cement cartridge was forced to the bottom of the casing. . . . It does not seem that a second or lower plug is necessarily included in the process. . . . Defendant claims that, by putting some cement on top of the plug, behind which pressure is applied, he has varied the process; but the evidence does not establish that this cement performs any useful function." *Perkins Oil Well Cementing Co. v. Owen*, 293 Fed. at 457, 458, 459.

"The appellees also contend that they do not (in the words of the claim) 'moisten the seeds by direct subjection to steam.' . . . They do moisten the seeds by a shower of spray in the mixing machine, produced by directing a jet of steam against a small stream of water. This is within the claim." *Lawther v. Hamilton*, 124 U. S. at 10.

"The only matters here seriously in dispute are the method for automatically and periodically reversing the electric current after a predetermined quantity of water has passed and the method and means for maintaining the flow of current appreciably longer than the flow of the water. . . . Current reversed automatically controlled by water volume is the invention, and as the defendants do not employ this control . . . they do not infringe." *McDowell Mfg. Co. v. Electric Water Sterilizer Co.*, 255 Fed. at 81, 82.

"Brooke by knives severs at predetermined intervals his continuously flowing stream . . . and so produces 'gobs.' . . . In defendant's machine, knives cut the 'sausage strings'; but 'gobs' are preformed. . . . The essence of Brooke's concept or idea is that (as disclosed) he always has a 'stream of flowing molten material' existing and moving by gravity alone; the contention here is that defendant's 'string of sausages' is such 'flowing stream.' . . . Defendant's and plaintiff's supplies . . . both are continuous and both are of glass; and that is not enough." *Homer Brooke Glass Co. v. Hartford-Fairmont Co.*, 262 Fed. at 429, 431.

“The patent requires that the wax must first be dissolved in the hydrocarbon solvent and then the alcohol be added thereto. . . . If a certain order of mixing materials is essential to the useful result to be secured by the process, that order must be followed, otherwise not. . . . There is an equivalent method of obtaining the same result, by mixing hot benzol and alcohol, adding finely divided wax, and stirring until cool. It is the process substantially as described, not literally, which is covered by the claims.” *Chadeloid Chemical Co. v. F. W. Thurston Co.*, 220 Fed. at 688, 689.

“It is admitted that the lamp described in the Sawyer and Man patent is no longer in use and was never a commercial success; . . . but it is said that, in the conductor used by Edison . . . he made use of a fibrous or textile material, covered by the patent to Sawyer and Man, and is therefore an infringer. . . . Instead of confining themselves to carbonized paper, as they . . . did, in their third claim they made a broad claim for every fibrous or textile material, when in fact an examination of over six thousand . . . showed that none . . . fitted. . . . There is no generic quality . . . which adapts them to the purpose. . . . The claims . . . with the exception of the third, are too indefinite to be the subject of a valid monopoly.” *Incandescent Lamp Patent*, 159 U. S. at 471, 472, 473, 477.

## V. Omitting Step

“Construing this claim to be one for a process . . . every successive step enumerated, must be regarded as an essential part, and must be employed by the defendants to render them liable to the charge of infringement. The first (‘spreading the wax upon the surface of the paper substantially as set forth’) certainly is not employed by the defendants. . . . This omission of the first step in the plaintiff’s process, plainly distinguishes

the defendant's from it." *Hammerschlag v. Garrett*, 10 Fed. at 481.

"The plaintiff contends that the treatment of the sawdust or wood fiber with the acids and the alkali is designed to rid it of impurities, and leave the carbon, as the explosive force of the mixture depends on the purity of the carbon. . . . But the difficulty is that the defendants use nothing in the place of the treatment by acids and an alkali, and the plaintiff has made such treatment essential, and does not say that it may be dispensed with." *Dittmar v. Rix*, 1 Fed. at 346.

"A study of the specifications confirms what is obvious from the claim itself that prior to the stannous chloride treatment there is a cleaning step followed by a washing step. . . . If Smith recognized that the initial cleaning was unnecessary, as appears from his letters to Snell, the fact remains that he did not patent a process with the step omitted. Instead, in three of the four claims he specifically described an initial chemical cleaning, and in the fourth a cleaning and a washing before the stannous chloride treatment. The defendants do not 'clean' the glass flakes in any such sense as the patent means by cleaning, and therefore they do not practice the patented process." *Foster D. Snell, Inc. v. Potters*, 33 U. S. P. Q. 113.

"The defendant contends that in the operation of his machine there is no melting and diffusing of the wax . . . nor removing of the surplus wax, nor remelting and polishing the wax over the paper. . . . I am not able to say . . . that in the operation of the Judd machine there is any removing of the surplus wax, or any remelting and polishing the wax upon the surface, which constitute the last two steps of the patented process." *Hammerschlag Mfg. Co. v. Judd*, 28 Fed. at 622.

"The thirteenth claim embraces the various operations . . . whereby bags are formed from a tubular blank while passing continuously through the machine. . . . By the conjoint action of two adjacent divergent moving

surfaces the diamond fold is formed. . . . In the defendant's machine . . . there is no second divergent moving roller, and the fold is not formed by the conjoint action of two divergent moving surfaces. . . . The means for making the diamond fold forming one of the elements of the tenth and thirteenth claims, it follows that there is no infringement." *Union Paper Bag Mach. Co. v. Standard Paper Bag Co.*, 29 Fed. at 97, 98.

## VI. Of Equivalents in General

"Now, there can be no doubt whatever that, although one man has obtained a patent for a given object, there are many modes still open for other men of ingenuity to obtain a patent for the same object; there may be many roads leading to one place, and if a man has, by dint of his own genius and discovery after a patent has been obtained, been able to give to the public, without reference to the former one, or borrowing from the former one, a new and superior mode of arriving at the same end, there can be no objection to his taking out a patent for that purpose. But he has no right whatever to take, . . . a leaf out of his neighbor's book, for he must be contented to rest upon his own skill and labor for the discovery, and he must not avail himself of that which had before been granted exclusively to another." *Walton v. Potter and Horsfall*, 1 Web. Pat. Cases at 590, 591, 3 Brodix at 179.

"One act is the equivalent of another when it works in substantially the same way to accomplish the same result." *Los Angeles Lime Co. v. Nye*, 270 Fed. at 159.

"The doctrine of equivalents, though well settled for many years, is anomalous, if the claim is measured only by its words. . . . Such a limitation is, however, irreconcilable with those extremely numerous decisions which have extended a claim to structures which by no possibility it could cover, judge by any tenable canons of docu-



mentary interpretation.” *Claude Neon Lights, Inc. v. E. Machlett and Son*, 3 U. S. P. Q. 221.

“The difference contended for by appellee is that the cheese fed into the steam chamber in its process is not in particles, as described in the patent in suit, but rather is a stringy, ropy mass. This contention is, in a measure, an admission by appellee that . . . it is making use of appellant’s process, but slightly changing the character of the material used. In other words, it admits a partial infringement, and this may account for the necessity . . . of a mechanical mixer.” *Lakeshire Cheese Co. v. Sheffield Cheese Co.*, 23 U. S. P. Q. 188.

“The claims as granted contain an express limitation to . . . pouring. . . . The coating of rolls by the Bingham . . . inclined trough machine employs this movement of a body of molten composition along and in contact with the partially submerged roller bases . . . does not infringe.” *Ideal Roller & Mfg. Co. v. Sutherland Paper Co.*, 26 U. S. P. Q., 174, 175.

“All of the claims in suit of both the machine and method patents of Mueller read directly upon the machine and method of defendant; but this does not prove infringement by the defendant, because, even though the result may be said to be identical, the mode of operation and the means by which the result is secured are different. . . . Both Mueller and defendant have the same old elements in the cutting portion of the machine, but no mechanism of the defendant for the folding of the noodles can be substituted for that of Mueller, although the result of the operation of all of the defendant’s mechanisms, working conjointly, is identical with that of Mueller. The folding of the noodles must be accomplished, either by all of defendant’s mechanisms, or all of Mueller’s mechanisms, including the cutting, working conjointly, and the doctrine of equivalents does not apply.” *C. F. Mueller, Co. v. Clermont Mach. Co.*, 20 Fed. (2) 415.



“The Ornstein patent is for a process of antisepticizing water by means of providing a minor flow with . . . free chlorine gas. . . . Defendant contends that discharging the sodium hydroxide collected from the cell and mixing it with the solution of water and chlorine gas in the mixing tank results in sodium hypochlorite. . . . If that assertion be true the disinfecting agent now used by the defendant is a different agent than that employed by the Ornstein patent.” *Electro Bleaching Gas Co. v. Pascoag Water Co.*, 4 U. S. P. Q. 228, 229.

“To avoid Stott and Jones, Borst disclaimed in the Patent Office the utilization of a mixing or circulatory movement for the distribution of oxygen throughout the body of sewage undergoing treatment, and relied upon ‘diffusion’ to distribute air at the surface of the sewage downwardly throughout the sewage. Borst was entirely right when he said, ‘There is in the applicant’s process, no circulation of the sewage, in the sense in which sewage is circulated in accordance with the Stott and Jones method.’ . . . Oxygen required to effectively carry out defendant’s process is absorbed by the sewage while in the form of a spray or film thrown outwardly over and above the top surface of the sewage by the aerating saucer at the top of the column. It is true that the falling droplets from the spray or film will agitate more or less the surface of the sewage and cause an additional absorption of oxygen. That amount is merely incidental. Oxygen taken up by the sprayed sewage is distributed throughout the body of the sewage. For this distribution defendant does not rely upon ‘diffusion’ as does the patentee, but upon a positive circulation of the sewage by pumping action of the aerators. I decline to construe plaintiff’s claims as covering defendant’s device whose commercial success in the art lies, not in the fact that defendant adopted plaintiff’s disclosures, but that defendant departed from them.” *Borst v. Simplex Ejector & Aerator Corp.*, 14 U. S. P. Q. 181.

"Thus we come to the question, as decisive, whether in 1904 [the date of application for the patent in suit] it would have been invention to substitute in the Harbison-Walker process a dry mix and a rotary kiln for a wet mix and a stationary kiln. . . . The use of the rotary kiln for burning magnesite was established in Europe. . . . It would not have been invention in 1904 to substitute this process of burning. . . . It follows then that the patent cannot receive a construction broad enough to cover a continuation of the old Harbison-Walker method with only this change." *Stowe v. American Refractories Co.*, 274 Fed. at 242, 244, 245.

"It is therefore safe to define an equivalent as a thing which performs the same function, and performs that function in substantially the same manner, as the thing of which it is alleged to be an equivalent.' . . . I think the law must be that where the new ingredient is such as would have been known to or employed by the ordinary skilled practical chemist, or is such as would naturally have been developed in the growth of the art, and the substitution thereof involves no alteration or new operation or result, it is covered by the patent, provided the specifications and claims are sufficiently broad to include it. . . . In the case at bar the defendants' body is a mere substitute.  $C_{22}$  is the next succeeding homologue of  $C_{19}$ ,  $C_{20}$ ,  $C_{21}$ . It existed in the arts; was referred to in the literature; the patented process of Coupier was capable of producing it. . . . The defendants . . . have taken the  $C_{22}$ , existing prior to the patent . . . subjected it to the process described in the patent, and obtained the patented product." *Read Holliday and Sons v. Schulze-Berge*, 78 Fed. at 496.

"It was not known at the date of the plaintiff's patent that the substance used by the defendant, and called 'ker-ite,' was such a non-conductor of electricity that it could be used . . . in the manner claimed in the plaintiff's patent. . . . Nor does it appear that qualities were then

known as existing in that substance which would necessarily lead to the conclusion that it could be so used. . . . Plaintiff's patent cannot be construed to cover such substance, in regard to which such things became known after the date of the plaintiff's patent." *Colgate v. Law Tel. Co.*, 5 Ban. and A. 437.

"Some accident of nature, or the skill of agriculturists, has produced and put on the market a cassava starch of that degree of viscosity, etc., which Perkins achieved by his degenerative process. . . . Defendant, by using methods as old as Gerard, has produced a substance, which plaintiff says is Perkins' glue. Perhaps it is in result; but it cannot be the same thing in a patentable sense, because nature has supplied the base and Gerard the process." *Perkins Glue Co. v. Standard Furniture Co.*, 287 Fed. at 111.

"The oxide of nickel with which defendant starts is now an article of commerce, prepared to be used to make nickel-plating solutions, and is made so as to be free from the injurious substance specified by Adams. . . . All that the defendant has done is not to vary the process, or its mode of working, or its essential conditions, but to apply a new solution worked in the same way and under the same conditions. . . . Infringement of claim 1 is established." *United Nickel Co. v. Pendelton*, 15 Fed. at 746.

"The theory of the defense was that if there was comminuted iron in this pot the chlorine . . . would to some extent, unite . . . to make ferric chloride and that the process would thus be changed . . . to that covered by a prior process patent. . . . Analysis of the water two days after the Bull pot had been filled with iron shows that there was iron in the water . . . after it passed through. . . . 1 part per 1,000,000. . . . When it reached the major flow it was diluted in the ratio of 1 to 3,000. . . . Such an amount of iron would not be detectable in the major

flow . . . it did not have any use. . . . The Bull pot apparatus . . . is merely an attempt to evade the Ornstein process." *Wallace and Tiernan, Inc. v. City of Syracuse*, 2 U. S. P. Q. 416.

"The process employed by defendant . . . is substantially different from that embodied in the Howard and Loomis patent. . . . Defendant cracks deep for the manufacture of gasoline, vaporizes . . . to the extent of ninety-five per cent . . . and recycles a substantial quantity of condensates." *Gasoline Products Co. v. Champlin Refining Co.*, 24 U. S. P. Q. 239.

"Claims 7 . . . of this patent relate to the re-aeration of the activated sludge. . . . If there be a difference in the use of that principle by appellant from that practiced by appellee under the claims, it is certainly a difference in degree of aeration and not in substance." *City of Milwaukee v. Activated Sludge, Inc.*, 21 U. S. P. Q. 84.

"Plaintiff contends that defendants have infringed not merely by using the Par-Lock process at a temperature identical with that under which the plaintiff operates, but as well when defendants purposely varied the temperature to some extent one way or the other. . . . We believe that this contention is sound. . . . Parkin . . . was the first to discover a new and improved way of using an aggregate of old processes, and the discarding of hot asphalt and its adoption at normal temperature for walls and ceilings, were the basis of his discovery." *Vortex Mfg. Co. v. Ply Rite Contracting Co.*, 2 U. S. P. Q. 158, 159.

"The principle upon which claim 3 is based is that all the particles of activated sludge shall not be suddenly submerged in undiluted raw sewage, and appellant's process accomplishes this by having the raw sewage enter a chamber which already contains a large proportion of partially treated sewage. Whether the gradual drawing off of the clear liquid from above the blanket sludge is performed in the aeration chamber, as in a fill and draw



method, or in a separate settlement chamber as used by appellant, we think makes no difference. . . . There is infringement." *City of Milwaukee v. Activated Sludge, Inc.*, 21 U. S. P. Q. 84.

"This fabric fur is made by imparting a plurality of designs to the pile of the fabric, and disturbing the pile intermediate the designs in one direction by whirring heated heads mounted in a gang machine and guided by a cam to effect a chevron movement which is in accord with the arrangement of the color designs. Then the fabric is passed in a different direction through another machine having similar whirring heated heads mounted on spaced spindles so as to pass through the points of the chevrons, thereby completing the whirring disturbance of the pile intermediate the several designs on the fabric. Dividing an element into distinct parts does not avoid infringement nor does the carrying out of a method by dividing a step into two operations avoid infringement." *Sidney Blumenthal & Co., Inc. v. Salt's Textile Mfg. Co.*, 21 Fed. (2) 473.

"The arrangement, location and change of location of the eggs at various stages of incubation was an essential feature of the disclosure. . . . Appellants devices based on an entirely different method . . . eggs . . . it mixes up those in various stages of incubation. . . . Appellant's device is not infringed." *Snow v. Smith*, 21 U. S. P. Q. 186.

"The defendant . . . insists that the Meyer claim does not cover a process for forcing the plating members into contact by a relative change in the diameter of the parts, but is limited to a contact attained by forcing the plating tube upon the core 'by contracting the diameter of the tube.' . . . The method which the defendant has used presents an equivalent of the method of the patent in suit, although it shows a reversal of one of its processes." *Burdon Wire and Supply Co. v. Williams*, 128 Fed. at 937, 938.



“The patented process is the application of steam and heat to the coffee in its uncured condition; the defendants’ process is the application of heat only to the coffee in that condition. The steam cannot be omitted and the process be the same. . . . If the patent should be construed to cover the application of heat only to coffee in a closed compartment, it might be void for want of novelty.” *Arnold v. Phelps*, 20 Fed. 316.

“Silicon—a metalloid—must be treated as a metal within the scope and terms of the process patent in suit, and the reduction of oxide of silicon is therefore to be considered for the purpose of this suit, a metallurgical operation. . . . The oxide of silicon is necessarily reduced before atoms of silicon can unite with atoms of carbon and form carborundum. The manufacture of carborundum as carried on by the appellee necessarily includes the practice of the broad process of the appellant; and infringement of the patent in suit is not avoided by the fact that after the reduction of the oxide of silicon, the atoms of that metalloid unite with those of carbon to form carborundum.” *Electric Smelting and A. Co. v. Carborundum Co.*, 102 Fed. at 632, 634.

“The principal answer of the plaintiff to these patents is that the process of resweating the leaves is a very different process from that of curing green tobacco, or renovating it as by Huse’s method, or treating stems by Payn’s. Taking this to be so, the defendants resweat instead of curing the tobacco which they treat, and do not thereby infringe the process of this patent for curing tobacco.” *Phillips v. Kochert*, 31 Fed. at 41.

“We do not think that Bradford’s patent can fairly be construed to cover broadly all methods of governing an electrical current through the use of electrical magnetism which operates after the current has overcome other magnetism. . . . We adopt the view of the defendant’s experts that the complainant and defendant were

proceeding upon opposite and diverging lines of experiment, and that each has produced an essentially different combination. As a result, we regard the defendant's device as an independent invention, which does not embody the substance of what the complainant is entitled to monopolize, and therefore there is no infringement." *Bradford v. Belknap Motor Co.*, 115 Fed. at 719.

"It would seem to the uninitiated certainly that there is room for a wide difference between the physiological process which Mege describes and directed should be pursued, and the mere rendering process at a low temperature which the defendant followed. A reading of Mege's several patents . . . impresses us with the conviction that he thought his was a physiological process, and dependent on physiological principles; that this process of digestion, by means of artificial gastric juice, at the temperature of the animal body, was an essential step in the production of the article which he designed should take the place of butter; while all the witnesses in this case agree that the product of the defendant's process, while it is pure fat, is odorless and tasteless, which is not the product which Mege intended should result from the practice of his process, as, he says the product of his process should have the taste of almonds or of fresh butter." *Commercial Mfg. Co. v. Fairbank Canning Co.*, 27 Fed. at 88.

"In the process covered by the second patent, the body of the ornament is first molded and formed in the die from the soft and moist materials, then removed from the die and permitted to dry and become hard, then again partially softened and moistened by steaming, and finally replaced in the mold or die with the cloth covering thereon, and by pressure reshaped, remolded, and re-formed. . . . Complainant contends that defendant, by applying solvent or liquid glue to the surface of the dry body of the ornament also softens it. . . . Unless softened and

made plastic, the body of the ornament and the additional cloth covering could not be placed in the original mold. . . . The defendant claims that the green and moist body of the ornament . . . will shrink sufficiently in drying to admit into the die the cloth covering in addition to itself. The testimony . . . is very conflicting . . . the evidence on the part of the defendant is more satisfactory." *Holstein v. Zeeland Ornamental Co.*, 211 Fed. at 465, 466.

"Each of the claims of patent No. 791,217 is limited to a 'by gravity' feed. The patent of Jungers employs a positive feed under both longitudinal and lateral tension. We cannot count this a colorable evasion of the gravity feed, for it does away with the possibility of a waviness in the laying of the wire which sometimes occurs with the gravity feed. And the fact that the last 15 or 18 inches of the wire is free from tension should not be held to characterize the process under which sheets ten or more feet long are made. No feeding appliance could well follow the fabric clear inside of the machine." *Western Glass Co. v. Schmertz Wire-Glass Co.*, 185 Fed. at 795.

"Defendants' plates have been made in either of three ways. . . . Second. By mixing the dry powder with about 2½ per cent of the fluid, and then applying the mixture to the plates or grids under hydraulic pressure. The mixture, before application, does not present the appearance of an ordinary paste; but when it is subjected to high pressure, and when the particles of the powder and of the fluid are thus extended, or brought into closer contact, there ensues either molecular or chemical action which produces what is known as 'setting.' . . . To the production of this action the fluid is apparently an indispensable agent. No other satisfactory reason for its use is shown. Whether or not, therefore, a mixture of dry powder with 2½ per cent of fluid is a paste while in the mixing tub, it seems to be a

true paste at the moment of application. . . . Third. Defendants also force an absolutely dry powder into the interstices of the grid by hydraulic pressure. While the particles of the powder, thus compacted together, are still in place, the grid is moistened with the fluid. . . . The result of these processes (or either of them) is a saturation of the powder. The percentage of fluid in the mixture thus formed is not stated . . . hardens in a few seconds, apparently going through the same process of setting. . . . Complainant's patent, however, covers any case where the form in which the layer of active material is applied is that of a paint, paste, or cement; . . . 'prior to their immersion in the battery fluid.' Whether the paste is compounded in the mixing tub, or on the surface of the grid, seems immaterial. . . ." *Electrical Accumulator Co. v. New York and H. R. Co.*, 40 Fed. at 328, 329.

"The process consists in mixing granulated vegetable and mineral matter in its natural state, such as wood chips or shavings, with granulated mineral matter—powdered magnesite—until each particle of vegetable matter is coated with the mineral matter. Then these chips or shavings coated with magnesite are mixed with a binder solution of magnesium chloride. . . . The defendant moistens wood chips or sawdust with magnesium chloride and then mixes them or it with powdered magnesium oxide until they are coated. . . . The transposition of some of the steps in a patented process, which does not change the principle, mode of operation, or result, does not avoid infringement." *Craft-Stone, Inc. v. Zenitherm Co., Inc.*, 22 Fed. (2) 401, 403.

"The company cannot reasonably object to the application of a test that tries the Harrisburg filters by the theories of the patents. . . . Their customary operation during six months failed to show the characteristics that are asserted to be inseparable from the apparatus and



the method of the patents. . . . Not infringed.” *City of Harrisburg v. New York C. J. F. Co.*, 217 Fed. at 380, 381.

“Roberts’ . . . method is distinguished from all others by the use of fluid tamping in deep wells of small caliber. . . . It follows that the use of benzine, or any other substance possessing that property of water which is made available in the patentee’s process, is within the scope of the patent, as a manifest equivalent. . . . The function of the tamping is to confine the force of the explosion. . . . A superincumbent column of fluid of sufficient gravity to accomplish this, is all that is needed. . . . If this effect is produced by filling the well only half full, or by means of a shorter column of fluid, all is done that the patentee’s process requires.” *Roberts v. Roter*, 5 Fish. 295.

“To accomplish the object, Beecher started with a squarely cut blank, and a pair of dies which must make a lap weld. The defendant started with a lobed blank . . . and . . . a pair of dies which led to a butt weld. . . . Bill is dismissed.” *Clement Mfg. Co. v. Upson and Hart Co.*, 50 Fed. at 541, 542.

“In view of the gradual advances towards perfection in the art of rolling side-bearing girder rails, and the state of the art at the date of the invention here in question, the scope of the claim must, on well-settled principles, be limited to the specific forms of construction shown and described by the patentee. . . . The defendant’s method of rolling is not a mere colorable departure from that of the plaintiff’s. . . . Infringement is not shown.” *Johnson Co. v. Tidewater Steel-Works*, 50 Fed. at 95.

“The defendants have not used or applied tin-foil in the process of vulcanization. . . . But it is claimed that the sheets of brass and tin . . . are an equivalent. . . . They are like rigid, plain plates or sheets fitted only for plain surfaces. They cannot be said to be tin-foil, or its



equivalent." *Poppenhausen v. N. Y. Gutta Percha C. Co.*, 2 Fish. 80.

"The patent . . . covers . . . all plates that are sufficiently flexible to admit of their being rolled upon the compound. . . . As the defendants use them, these iron plates hold between them the soul and body of Meyer's invention . . . we judge them to be neither material or useful, and cannot see how they relieve the defendants from the charge of infringement." *Poppenhausen v. Falke*, 2 Fish. 213.

"Animal or vegetable oils, or concrete fats . . . prevents the sticking of the gum or compound to the plates . . . during the process of vulcanization. . . . The defendants . . . admit that they use spirits of turpentine with a small quantity of rubber dissolved in it. . . . This solution is an equivalent. . . . It accomplishes the same results in the same way, and by substantially the same properties of matter, in the material used." *Poppenhausen v. Falke*, 2 Fish. 213.

"This invention . . . comprises a method wherein chlorine . . . is uniformly distributed through and absorbed by a minor body of water . . . and . . . is then uniformly distributed through a major body of water flowing as a continuous current. . . . The defendant has appropriated all the advantages of the invention, infringement cannot be avoided merely by changes in the form of the defendant's apparatus from the absorption tower to the injector." *Electro-Bleaching Gas. Co. v. Paradon E. Co.*, 8 Fed. (2) at 891, 898.

"Obviously the complainants' machine and the defendants' machine are essentially different, both in construction and mode of operation. The former machine operates upon previously shaped tubular blanks, and welds them by the impact of reciprocating dies. The latter machine has no dies, and does not operate by welding impact, nor upon previously shaped tubular blanks. By means of a series of revolving rolls disposed around a

continuously rotating mandrel, and acting in connection therewith, the Blakey machine converts a flat strip of metal into a welded and finished socket. The reciprocating dies and the revolving rolls are not equivalent in a patentable sense. . . . Noninfringement must be sustained." *Fitch v. Spang, Chalfant and Co.*, 140 Fed. at 294.

"The object of the patent law is to protect the inventor, not in some paper ideal, but in his actual contribution to the useful arts. . . . This is not an improvement in an art, it is the foundation of a new art. . . . And so . . . although a process claim is a description of the step by step means by which a particular result is achieved, yet it is possible for two steps to be taken concurrently instead of their always being required to go successively, the pressure specified . . . should be held to include not only that pressure which is given to the Hatschek pulp independently and subsequently to its treatment upon the accumulator roll, but that, inasmuch as for many practical purposes no pressure is needed beyond the pressure that is exerted by the rolls . . . the pressure mentioned. . . . likewise covers the pressure that is exerted by the pressure means of the cardboard machine. . . . The pressure having a result upon this Hatschek pulp which the pressure of the cardboard making machines never wrought upon the paper pulp." *Asbestos Shingle S. and S. Co. v. Rock Fibre Mfg. Co.*, 217 Fed. at 71, 72.

"The patentee made a new stencil, and printed from it by the old method. He now seeks to prevent others who also invent new stencils from using the same old method. . . . Defendant does not infringe." *Edison v. Klaber*, 38 Fed. at 746.

"In order to constitute infringement there must be not only identity of results but identity of means or procedure for producing results. . . . It is the setting and not a further setting of the coil that is occasioned by the said reducing and feeding rolls in the defendant's

machine. . . . Claim 3 . . . provides for 'abruptly bending the armored cable and causing portions of adjacent coils to momentarily bind against each other, thereby neutralizing the torsional strain.' . . . This seems to me to be the reverse of what defendant does, because in the defendant's product the adjacent coils are brought into binding relation as succeeding convolutions are wound in overlapping relation, and the operation . . . breaks down any frictional engagement which may exist between interlocking edges of the convolutions. . . . Defendant has not infringed." *National Metal Molding Co. v. Triangle Conduit Co.*, 292 Fed. at 995, 996.

"In the Wiley machine the electrical current . . . is divided, and as soon as an electrical connection is formed by one movement of the unison-wheel and both magnets are energized, both type wheels are moved one step, and are continuously simultaneously moved, until . . . that wheel stops and the motion of the other wheel continues. . . . This mode of operation or method differs materially from one which consists in causing the type-wheel that is being moved to keep turning the other type-wheel to a designated point, and there leaving the same, although by a skillful use of words the two modes may be said to be the same. . . . Decree . . . dismissing the bill." *Gold and Stock Tel. Co. v. Wiley*, 17 Fed. at 239.

"'I am the first to discover that comparatively thin tubes of large diameter can be swaged and upset into spheroidal form . . . and that the metal can thereby be upset without crimping to receive the desired form.' . . . Defendant's process which produces the spheroidal bodies from corrugated tubing solely by folding and unfolding the corrugations, or, if extreme contraction of diameter is required, by buckling or doubling in some of the corrugations, and which does not upset the metal, nor make it thicker in some parts and thinner in others, is not an infringement." *Jackson v. Birmingham Brass Co.*, 79 Fed. at 807, 809.

“Defendant uses three operations to perform what the complainant does in one, but this increase of motion is merely for the purpose of avoiding the patent claims. There would not seem to be any invention in taking two strokes where one would do the same work, or in so setting the knives as to leave an edge to be afterwards sharpened, which might as well be sharpened by the first stroke. . . . Decree . . . for an injunction.” *Acme Steel Goods Co. v. American Metal Fasteners Co.*, 206 Fed. at 481, 482.

“In the Hitchcock device, rhythmic formation of suspended ‘gobs’ of molten glass is accomplished by letting the molten glass flow through the discharge tank through a continuously open orifice, the ‘gobs’ being severed from the mass of glass by properly timed mechanism, and then the withdrawal or retracting of glass passing through the orifice by the operation of a vacuum. . . . In the Miller device, the formation of ‘gobs’ is brought about by the closing of the orifice through which the glass flows from the discharge tank, by inserting a plunger into the orifice. . . . The . . . Miller structure has produced a commercially operating machine; the Hitchcock device has not. . . . The Miller feeder does not infringe the Hitchcock patents.” *Hartford-Fairmont Co. v. United States Glass Co.*, 2 Fed. (2) at 110, 111.

“The plaintiff . . . claims the cutting . . . only when the requisite velocity is ‘artificially’ given to the sand. . . . The word ‘artificially’ in the first claim of the plaintiff’s patent, and throughout the specifications, covers the falling of sand through a vertical tube high enough to enable the sand to acquire sufficient velocity to do its work. . . . It would not be done if the sand fell unconfined and unguided by a tube, . . . because . . . the falling of the sand in the tube, which is at first slow, sets the air in the tube in motion, and then the sand gradually falls more rapidly, until it finally acquires sufficient velocity to do the work. There is thus produced an arti-



ficial current of air. . . . It is infringed by the defendant." *Tilghman v. Morse*, 1 O. G. 574.

"Appellant's claim of noninfringement is based in part on the assertion that its product contains no 'alternating layers of plastic material' and alternating layers are not used in its process. . . . The two patents are the result of a division and therefore the product patent may well be examined to ascertain the scope of the invention and to better define 'the equivalents' that may fairly be recognized. No claim of this patent requires a plurality of plastic layers. . . . The term 'alternate layers of plastic material,' . . . describing the process rather than the elements that entered into the product. . . . The presence or absence of several layers, however, has nothing to do with the process which patentee was describing in this patent. The covering for the edges of the gypsum was the heart of the discovery." *Bestwall Mfg. Co. v. United States Gypsum Co.*, 270 Fed. at 545.

"The claims of the patent in suit call for a method of removing the refractory core by—'discharging a jet of gaseous fluid under pressure directly against the end of said core.' . . . The method works most satisfactorily . . . when the pressure is about 1,000 pounds. If the pressure is reduced, the progress of the jet is retarded, until at a pressure slightly above 100 pounds there is no progress. . . . The method used by the defendant is to discharge through a rotating tube a jet of gaseous fluid, under pressure of about 100 pounds. . . . The removal of the core is brought about, not by the jet alone, but by the joint action of the jet and the rotation of the air conveying tube . . . if the rotation of the tube ceases, the air pressure is without effect, . . . if the air pressure is removed, the rotating tube is likewise ineffective. In defendant's method the function of the rotating tube is not merely to facilitate the action of the jet. The rotating tube and the air pressure are alike indispensable. . . .



Defendant does not infringe.” *Heller Bros. Co. v. Crucible Steel Co.*, 297 Fed. at 44.

“The amount of power used by the respondent is . . . very minute, nevertheless it is power developed . . . by ‘a metallic rotating body,’ and transmitted to a ‘suitable counting apparatus, operated’ by the same rotating body. . . . The Tesla invention in issue . . . derives its right to recognition from the fact that it was applied to the production of power. . . . [Prior art] Baily was seeking . . . a revolving disc. . . . He did not attempt to transmit that power which . . . was the soul of Tesla’s invention, and which we have also shown is involved in the infringing device [a meter], although perhaps to a minimum. . . . Decree in favor of the complainant.” *Westinghouse E. & Mfg. Co. v. Stanley Instrument Co.*, 133 Fed. at 184, 185.

“The defendant does not claim that its manufacture differs from the Chase method, except . . . the bevel is stamped . . . and the metal displaced . . . instead of being spread laterally, is forced partly upwards on each side and partly forward of the point. The superfluous metal is afterwards sheared off as in the Chase method. . . . The defendant’s method of beveling the point is a substantial equivalent of the same operation in the Chase method. Exactly the same result is produced in both cases.” *Globe Nail Co. v. United States Horse Nail Co.*, 19 Fed. at 822.

“Lubbers solved the problem . . . by adjusting the bait on the next draw off-center and against the tension disclosed in the previous draw . . . relying upon the force of surface tension in its discovered direction and strength to recenter the bait. . . . Lubbers was not granted a monopoly of the problem of surface tension but was granted a monopoly only for his solution of it. . . . The defendant . . . went below the surface, extended a lip into the molten glass, corrected the variables, and ascertained a fixed position from which thereafter all

draws could be made without adjustment. . . . Slingluff's method of overcoming surface tension was wholly outside the field of the Lubbers patent." *Window Glass Mach. Co. v. Pittsburgh Plate Glass Co.*, 284 Fed. at 656, 657.

"The defendants . . . saturated the leaves of their tobacco with adhesive substances by sweetening them with syrup, and intermixing with the leaves what is known as plug-scrap, which is highly charged with adhesive material. . . . They have used an equivalent for the gum arabic of sufficient adhesive properties to impart the flaky characteristic to the product when dried. This is infringement." *Kimball v. Hess*, 15 Fed. at 394, 395.

"Goldschmidt discovered the internal ignition of a small portion, and thus the means of making the reaction commercially useful. . . . In one sense merely an improvement on Vautin; but in another sense he made a great step in advance. In the latter sense he is not to be considered as one who has made a mere improvement on an existing process. . . . The law affords him a range of equivalents commensurate with . . . his invention. . . . There is . . . no difference in principle whatever between the two methods. . . . Infringed." *Goldschmidt Thermit Co. v. American Vanadium Co.*, 291 Fed. at 87, 88.

"The appellee . . . removes the moisture from oil by passing the oil between electrodes . . . to cause the suspended particles to coalesce. . . . There can be no doubt . . . that the appellee prevents short-circuiting in the same manner and for the same purpose, if not to the same degree, as does the appellant. The degree is unimportant. It is obvious that neither the appellant's nor the appellee's process will work if the current is entirely short-circuited. It is necessary in both to maintain a high voltage, and to permit the passage from one electrode to the other of small portions only of the current. . . . The appellee uses the appellant's process." *Petroleum Rectifying Co. v. Reward Oil Co.*, 260 Fed. at 178, 180, 182.

“Campbell uses the small amount of sand he does, not to make a building block that a nail cannot be driven into, not to make his block unlike Straub’s . . . but to really get the real thing Straub gave the building art, and escape paying tribute for such by using a small and negligible quantity of sand. . . . The block holds the nails just as Straub first showed could be done. Taught by Straub, and copying and using his teachings in substantial and functional form, Campbell must be decreed an infringer.” *Straub v. Campbell*, 259 Fed. at 574.

“ ‘When the alcohol and the acid are combined the compound of the two will act on an oily surface.’ . . . The admixture used by the defendant contains more water and some other ingredients possibly not contained in the Feidt admixture, but the properties of the Feidt admixture are there dominant, and are not substantially affected by the additions. The defendant applies its admixture or compound substantially in the same manner, upon the same objects, for the same purpose, and produces the same result as does Feidt. . . . Infringed.” *American Chemical P. Co. v. C. R. Wilson Body Co.*, 298 Fed. at 313, 314.

“We see no difference between the blow of a paddle and the blow of a blast of air as means to produce agitation.” *Miami Copper Co. v. Minerals Separation, Ltd.*, 244 Fed. at 766.

“Defendant’s process infringes. . . . It employs 2.2 parts of lead oxide to one part of arsenic acid, being thus between the minimum and maximum of the patent, and it employs 2.81 per cent. of nitric acid as a catalyzer, which is between the minimum of 1 and the maximum of 3 per cent. specified in the patent. It is not, to our minds, important that defendant makes only a pyro-arsenate.” *Toledo Rex Spray Co. v. California Spray Chemical Co.*, 268 Fed. at 205.

“The inference is irresistible that Jensen’s patented process will not produce a pepsin having the digestive

power of that sold by the defendant, and that the plaintiff is employing other and secret means to secure such result. . . . Bill of complaint will be dismissed." *Carl L. Jensen Co. v. Clay*, 59 Fed. at 293.

"What has been done by the defendant in a big way is nothing but what Coslett did in his little way. The defendant has divided up the process of the patent in suit into steps, which comes to exactly the same end. . . . The solution is more dilute . . . but the action is the same, and the results are the same. . . . Hydrolysis takes place in one as in the other and was not invented by the defendant. . . . Nature is doing for defendant what it was doing for Coslett. . . . I find nothing in Coslett that is not found in the defendant's process, solution and coatings. . . . Infringed." *Parker Rust Proof Co. v. Ford Motor Co.*, 6 Fed. (2) at 658.

"Under these instructions not to allow the chalk mark to go below the floor there was retained in the mixer about 175 tons of molten metal, amply sufficient for the purposes stated in the Jones patent. . . . And that the homogeneous mixture, once obtained, is used as a dominant pool to produce a graduated, nonabrupt product, is shown by the chalk line minimum limit of 175 tons. With such a permanent dominant pool in constant use, we are clear that respondent's practice infringes." *Carnegie Steel Co. v. Cambria Iron Co.*, 185 U. S. at 440.

"The defendant, like those from whom it gained the information, first heated the converter without the use of silica and thus started the operation by a process which was not Smiths. Having once obtained the magnetite coating on the magnesite lining, it then shifted to the Smith process and practiced it faithfully. But the defendant says that, in doing this, it was protecting the newly established magnetic coating, not the underlying magnesite lining, to which alone Smith's invention is directed. . . . There are times when the magnetite coating will disappear and the magnesite lining will stand bare.

. . . While using the process of the patent to protect the coating, it always used the process to protect the lining when . . . the lining became exposed . . . when the occasions arose, as they repeatedly did. . . . We find infringement." *United Verde Copper Co. v. Peirce-Smith Converter Co.*, 7 Fed. (2) at 18.

"Attempts were made to solve the problem prior to the dates of invention of the patents in suit, but in all of them all of the air was treated, and, if any reheating of cold air was accomplished, it was by means of heating devices, usually requiring the use of a steam boiler under summer conditions, which was objectionable. The patentees of the patents in suit taught the art that all the air need not be treated, and that mechanical reheaters could entirely be eliminated and comfortable conditions produced at a reasonable cost despite the quantities of air handled. . . . Lewis perceived that, due to this phenomenon, air in a theater was a perfect reheating agency, which could be mixed with the conditioned air for raising its temperature and lowering its relative humidity, and therefore conditions but a small percentage of the total air, and recirculates or bypasses a large volume, which reheats the conditioned air and eliminates the necessity for steam reheaters under summer conditions." *Auditorium Conditioning Corp. v. St. George Holding Co.*, 19 U. S. P. Q. 65 and 67.

## VII. Of Contributory Infringement

"It is well settled that where one makes and sells one element of a combination covered by a patent with the intention and for the purpose of bringing about its use in such a combination he is guilty of contributory infringement and is equally liable to the patentee with him who in fact organizes the complete combination." *Thomson-Houston Electric Co. v. Ohio Brass Co.*, 80 Fed. at 721.



"The real question in issue is whether . . . a person selling a single part for use in an apparatus employed in manufacturing an article protected by a process patent is guilty of contributory infringement. . . . The valves sold by defendants in no wise affected the process, but at most the apparatus which was not protected by the letters patent of plaintiff. . . . Defendants were not guilty." *Miller v. Electro Bleaching Gas. Co.*, 276 Fed. at 381, 382.

"Defendants manufacture a device capable of infringing use and sell it with the intent that it shall be so used. The instructions not to use additional humidity in the hatching chamber are a mere form, and are inconsistent with specific instructions, the following of which will necessarily result in infringement. . . . The defendants have directly and contributorily infringed." *Bundy v. Cugley*, 30 U. S. P. Q. 343.

"The defendants . . . sold and delivered to Standard Bitulithic Company, at Newark, New Jersey, a quantity of bituminous (asphalt) emulsion, with knowledge that the emulsion was to be used by Standard Bitulithic Company for the curing of a concrete roadway in Newark, New Jersey, by spraying the emulsion on the surface of unset, freshly laid, uncured concrete roadway, for the formation of a waterproof bituminous film on the surface of the roadway, for the prevention of the evaporation of water from the concrete during curing. . . . The defendants claim immunity by reason of the fact that Hayden's application was assigned to, and the patent granted to, the Barber Asphalt Company, the plaintiff. It was a dealer in bituminous emulsion—an unpatented product—and it is contended to hold them as infringers would be giving the patent a monopoly of an unpatented article. . . . We cannot agree with that contention." *Barber Asphalt Co. v. Stulz-Sickles Company*, 33 U. S. P. Q. 266.

"The contracting appellants supplied their respective materials and work with respect to the extension plant with knowledge, and with intent to aid . . . in commit-

ting its acts of infringement, and they must be held as contributory infringers, except that if the extension plant was not operated until after the expiration of (process) patent No. . . . then there could have been no infringement of that patent." *Fehr v. Activated*, 84 Fed. (2) 957.

"There is no doubt that the kind of mulch paper sold by defendant could be used without violating these patents. Defendant would not be guilty of contributory infringement in selling this paper to be used in any method outside of those covered by the patents." *Graham Paper Co. v. International Paper Co.*, 8 U. S. P. Q. 469.

"The defendant Gardner Fibre Company manufactures stake and strand fabric suitable for the manufacture of wicker furniture under the Lloyd method, and the defendant Monarch Manufacturing Company buys the fabric to use in the manufacture of wicker furniture. Obviously, the Gardner Company knew what the Monarch Company was going to do, and persuaded them to undertake the use of their goods. Both defendants are infringing the patent, one by weaving the fabric and the other by reshaping the fabric and attaching it to the chair frames." *Greenwood v. Monarch Mfg. Co.*, 30 Fed. (2) 547, 548.

"The method claim had been contributorily infringed because the defendant had procured the manufacture of a large number (60,000) of such signs, and that the article claims were infringed by the use of the signs so manufactured." *Vacuum Oil Co. v. Grabler Mfg. Co.* 53 Fed. (2) 976.

"The defendant Cutler Desk Co. is claimed to be a contributory infringer because of its sale of a kiln. . . . Petcocks were generally used in steam radiators to prevent them from becoming air-bound. The different photographs of kilns disclose means for heating and circulating air and moistening it and measuring temperature and humidity, but that defendants supplied such means is not satisfactorily shown. The inference is not unwarranted that the phonograph company made the connections sub-

sequently and supplied the required means, since at the time of sale and installation only means for heat and air circulation were included." *Wenborne-Karpen Dryer Co. v. Cutler Dry Kiln Co.*, 285 Fed. at 77, 78.

"The patent states, as an essential element of the patented process, that the liquids used therein shall be successively applied in a given manner. The defendants have sold a hair dye put up in three separate bottles. . . . The circular accompanying said bottles shows that defendants apply said dye in the manner specified in the patent, and sell it to others to be so applied. Such sales constitute contributory infringement." *Imperial Chemical Mfg. Co. v. Stein*, 69 Fed. at 617.

"The Catlin patent was upheld because the inventor had succeeded in getting rid of the fine powder which was supposed to be indispensable to success, and used a powder in a uniformly granulated condition. It is, therefore, the use of such powder which constitutes infringement and when a manufacturer of acid phosphates sells a manufacturer of baking powder a barrel of granular acid phosphate the presumption is not unfair that he expects it to be used for baking powder. There is testimony tending to show that 'special' phosphate is specially adapted for use in making baking powder. . . . A prima facie case of contributory infringement is established." *Rumford Chemical Works v. Hygienic Chemical Co.*, 159 Fed. at 438.

"It would seem clear enough that the judge who granted this injunction made no mistake in holding that the making and selling of these filters, adapted to and intended, as they were, for no other use than filtering beer or similar fluids, should be held as contributing to such use by brewers, and as standing on the same liability as the parties actually using them." *Loew Filter Co. v. German-American Filter Co.*, 107 Fed. at 950.

"Defendant . . . is engaged in manufacturing and installing filters embodying the construction and adaptation

of parts peculiarly fitted to the operation of the process of complainant's patent. He provides a tank . . . useful only for the reception of a coagulant. . . . He provides a series of pipes to conduct a separate inflowing current . . . to take up the coagulant. . . . All of these parts would be unnecessary and useless, except for . . . a coagulating process to be conducted without settling basins. . . . Defendant . . . manufactures and installs filter for the purpose, shown by his advertisements and otherwise, of inducing others to use the patented process. . . . He is . . . guilty of intentional contributory infringement." *New York Filter Co. v. Jackson*, 91 Fed. at 425, 426.

"The defendants . . . are engaged in the manufacture and sale of a machine which embodies the Andrews process. They produce their nitrogen peroxide chemically. . . . The defendants are guilty of contributory infringement." *Naylor v. Alsop Process Co.*, 168 Fed. at 914.

"Counsel for the respondent insist that he has not infringed the Cooley patent; and their argument is that said patent is for a process, and not for a mechanical device, while respondent's invention is for the latter, and not for the former. It is impossible to maintain this distinction. . . . The respondent manufactures the 'Hawkeye pan,' and sells it to customers to be used by them in raising cream from milk according to the process described in the Cooley patent. He advertises and sells the can for this very purpose . . . accompanied by directions . . . which . . . require the adoption and use of the Cooley process . . . infringement is established." *Boyd v. Cherry*, 50 Fed. at 281, 282.

"They have infringed the process of Johnson because they supplied the apparatus adapted to employ Johnson's process with intent that the plant should be or would be operated as that put in for the Tennessee Fiber Company. It was therefore guilty of contributing to the infringement of the first claim of the Johnson patent." *Johnson v. Foos Mfg. Co.*, 141 Fed. at 88.



"The subject matter of the patent is a 'gear wheel.' . . . Defendant does not manufacture gears, but makes and sells discs capable of being cut into gears by any trained mechanic. . . . But what makes the gear a gear is the same thing in both products. Therefore infringement exists. . . . As defendant does not make or sell completed gears, but a material which when in discs makes gear making easy, and when in other forms may have other uses not related to machine driving, the injunction to issue under this decision may require careful drafting." *General Electric Co. v. Continental Fiber Co.*, 256 Fed. at 661, 662, 666.

"If the defendant makes use of the processes patented by Baekeland, when applied to the substances described by Baekeland in the production of the commercial material covered by the Baekeland inventions, then it cannot escape the charge of infringement by showing that this material was produced by the Redmanol Company with hexa, instead of with formaldehyde and ammonia separately. . . . The defendant . . . is using this equivalent material in carrying out the process of the Baekeland patent. In this sense the defendant is in a position analogous to a contributory infringer if the Redmanol Company were a primary infringer." *General Bakelite Co. v. General Insulate Co.*, 276 Fed. at 186.

"Tubular woven fabrics with a stiff weft, resisting collapse, being old, it is in my opinion entirely against the whole course of former decisions to exclude manufacturers of flexible tubular conduits from selling them for the use of enclosing conducting wires. . . . The decision . . . that the Osburn patent is valid . . . does not conclude the defendant's contention that, if the claims are so broadly construed as to cover defendant's present device, they are invalid." *Robinson v. Tubular Woven Fabric Co.*, 248 Fed. at 545, affirmed *National Metal Molding Co. v. Tubular Woven Fabric Co.*, 254 Fed. 304.



“Contributory infringement exists where one knowingly concerts or acts with another in an unlawful invasion of a patentee’s rights. If such assistance is given by furnishing an essential part of an infringing combination and the part furnished is adapted to no other than an infringing use, such contribution makes him a contributory infringer. On the other hand, if the part furnished is adapted to other and lawful uses, in addition to infringing uses, than an intent to furnish for infringing use must be established before the furnisher can be held a contributory infringer.” *General Electric Co. v. Sutter*, 186 Fed. at 638.

“The preparation of a ‘wort-making stock,’ composed of the ingredients in the proportions claimed, alone, will constitute such infringement. . . . The complaint urged against the respondent, however, is that he sold this preparation to brewers, accompanied by a recommendation of its use for brewing purposes. . . . He issued circulars . . . suggesting that it be used ‘in the mash-tub with malt.’ . . . If he had recommended its use in the preparation of a ‘dry wort-making stock’ . . . the sale and recommendation would have rendered him responsible . . . if his advice had been followed. He, however, did not so recommend.” *Geis v. Kimber*, 36 Fed. at 109.

“What the defendant did, to wit, use the constituents of the complainant’s patent with the intent and for the purpose of enabling the buyer to turn the compound into bread by the application of water and heat, places him in the attitude of an infringer; that it . . . throws upon the defendant the burden of showing that the self-raising flour . . . prepared by him was not, in fact, used for bread making.” *Rumford Chemical Works v. Hecker*, 10 O. G. 289.

“The defendant sells an extract containing saponine to persons who intend to use it in the combination claimed in the patent, and it is advertised and sold for that very

purpose. Such a sale we regard as an infringement of the patent, though the manufacture and sale of the extract of saponine would not, without more, be an infringement." *Bowker v. Dows*, 15 O. G. 510.

"The intent and purpose in making and selling this motor was that it should be used in the patented devices in Canada. . . . It would not be an infringement to put the motor to the use intended, because that use was beyond the protection of the patent. . . . What we have said applies as well to the method patent as to the combination claims. . . . There being no intent to provide means by which another might unlawfully use the Tesla method, there is no contributory infringement." *Bullock E. and Mfg. Co. v. Westinghouse E. and Mfg. Co.*, 129 Fed. at 111, 112.

"The defendant sells the gypsum and glue put up in packages, upon which are printed directions . . . they follow quite closely the formula of the patent. The liquid thus produced . . . is almost the exact counterpart of that described and claimed in the patent. . . . In selling a compound which he knows cannot be practically applied without making the user a trespasser, the defendant . . . renders himself an accessory to the infringement." *Alabastine Co. v. Payne*, 27 Fed. at 560.

### **VIII. Of Ownership of Implements and Infringement**

"The making of the machines might not be such a use of the process as to be an infringement of that claim, but the selling of them for use would be such a concurrence in the practicing of the patented process that the use of them would involve as to amount to a partaking as principal in the infringement by it." *John R. Williams Co. v. Miller, Du Brul and P. Mfg. Co.*, 107 Fed. at 293.

"A license to use plaintiff's process cannot be implied from the sale of the mold to the defendant in the absence of satisfactory evidence that the molds were purchased

from someone authorized by the plaintiffs to sell them without restriction. . . . They are capable of use for purposes other than carrying out the process." *Popsicle Corp. v. Weiss*, 40 Fed. (2) 302.

"The defendant insists that the purchase of the creamery from the orator brought with it the right to practice that process with the cans bought with it, and . . . any others . . . that might be put into it. . . . The sale of the cans . . . would carry the right to use them as fully as the vendor could, which would include the right to practice the patented process with them. . . . They could be repaired, and their identity and that right would remain. When replaced by others, their identity was gone, and the right to use the process was gone with them. . . . No right to use the process apart from the things sold follows from the sale merely of the things." *Vermont Farm Mach. Co. v. Gibson*, 46 Fed. at 489.

"Appellee has in its factory the elements that could be assembled into the Schmertz apparatus. But . . . such a combination is never made by appellee in carrying out its non-infringing process. While the south roll is spreading the lower sheet the north roll is functionless and might as well be detached. After the wire is laid the north roll, by being elevated on the trangs, is brought for the first time into co-operation with the table, and at the same time the south roll is taken out of the combination. . . . Instead of working concurrently and co-operatively as elements in a single tool for making wire glass progressively, appellee's rolls work independently and not even successively, for the operation of laying the wire intervenes." *Schmertz Wire Glass Co. v. Western Glass Co.*, 195 Fed. at 762.

"These parties only bought the solution. Had they used it without having bought it from a licensed party they would have infringed the third claim of the patent. . . . But this fact does not affect any other claims of the patent. The fact that they purchased from author-

ized agents this solution which enables them to nickel plate, does not, inferentially or otherwise, authorize them to use it in nickel plating without obtaining a license to use the invention covered by the other claims. . . . Each claim is, in effect, a separate and distinct patent.” United Nickel Co. v. California Electrical Works, 25 Fed. at 479.

## CHAPTER 14

### INFRINGEMENT OF PATENTS ON CHEMICAL APPARATUS

A patent on a chemical apparatus may be infringed by an apparatus of very different outward appearance, because infringement is found when parts co-operate with the material treated in the way that parts of any patented structure co-operate with each other.

Other features not ordinarily given much weight in mechanical patents may fully answer the question whether the patent is infringed.

The law on chemical apparatus is developing slowly, but a few cases are cited.

#### WHAT THE COURTS HAVE SAID

“It is . . . entirely clear that the electrodes themselves have been sufficiently denuded of occluded gases to continue to operate throughout the entire life of the tube, without further contaminating the pure neon gas contained therein. This being so, the electrodes, when delivered for use, have been deprived of occluded gases within the meaning of the patent.” *Claude Neon Lights Inc. v. Photion Electric Corp.*, 2 U. S. P. Q. 100.

“Defendants’ adaptation, consisting of heating and emptying the impurities in its Geisler tube, results in illumination immediately upon turning on the neon gas. Passing the current into the tube before any neon enters, or to pass the current between the electrodes and through air and water vapors in the tube, the electrodes being sealed at the ends, all with a view of driving out the occluded gases or impurities to attain the desired result, was not a new element.” *Claude Neon Lights, Inc. v. Sun Ray Neon Corp.*, 2 U. S. P. Q. 244.



“In the former the protection of the tuyere by the presence in part of its nose body of a refractory material, slag, is not provided by the maker or finisher of the tuyere, but comes about as a result of forces brought into play by the operation of the furnace after the tuyere has been installed therein and put into use. In the latter the means of protecting the tuyere by a refractory material are provided by the maker or finisher of the tuyere before it is put into use. . . . It cannot reasonably be said that means which come into existence as a result of forces brought into play by the operation of a blast furnace, and which are not controlled or directed by any human energy, are the same or an equivalent of means selected and installed by the maker or finisher of a mechanical device.” *Beaton v. Tennessee C. I. and R. Co.*, 20 U. S. P. Q. 293.

“Claims 2 and 8 are directed to apparatus in which the bottoms of the aeration chambers are sloped. . . . In appellant’s device the ridges on the bottom which extend across the channels of the aeration units correspond with the ridges in the patent which divide the tank bottoms into hoppers rather than channels but claims 2 and 8 of this patent are not limited to four sided hoppers and describe appellant’s channels, or two sided hoppers, quite clearly. The function of each is precisely the same, it is accomplished in the same manner, and the result of each is identical.” *City of Milwaukee v. Activated Sludge Inc.*, 21 U. S. P. Q. 83, 84.

“Appellants urge . . . that the amount thus re-entering the air from the diffuser is inconsequential. The evidence does not support this contention. The record discloses that the amount is relatively small as compared to the total amount entering the air column, but without the rounded corner on the top of the diffuser the descending sludge at that point would settle in that corner and it would become septic, thus preventing a successful operation of the process. . . . There was infringement.” *Fehr v. Activated Sludge*, 84 Fed. (2) 955.

“The completely impractical nature of plaintiff’s device if the filter material is discarded, is so apparent as also to lead to the conclusion that such material is an indispensable component part of the invention. The fact is not contradicted that, in the absence of the filtering medium in plaintiff’s device, as disclosed by both specifications and drawings, the hot gases carrying the soot and grease, or other deleterious matter, would be ejected for the most part, if not exclusively, through the front or vertical grilled opening of the hood for a distance of several feet forward or horizontally in the face or against the body of the person using the stove, which would obviously be so objectionable as to render the device unmarketable. This method of operation would be directly contrary to what we have seen to be the primary advantage of plaintiff’s device as claimed in the specifications, statements before the Patent Office, and trade circular. The undesirable result is obviated in defendant’s device by the fact that the primary opening of the hood is parallel with the top of the stove, and the vapors containing the grease or soot are projected by the semi-cylindrical wall of the hood through this opening, downward upon the stove, and not in an outward direction toward the operator, except for some of the solids which may adhere to the inner surface of the wall of the hood. A small portion of the grease or soot-laden gases that escape may pass through the narrow openings or louvers in the front portion of the curved hood particularly when the stove is first lighted, and before the vapors are moving sufficiently rapidly to insure their discharge through the primary opening at the bottom of the hood. When, however, the stove reaches a normal, high temperature, the vapors are sufficiently heated so as to be impelled through this primary opening without backing up into the top of the hood; and even such small portion of the vapors as does circulate in this manner will not pass out directly against the person using the stove. . . . That the claims of plaintiff’s patent upon

which it relies to sustain its claim of infringement, are void because of their too great breadth and failure to conform to the specifications and drawings, it follows that the bill of complaint must be dismissed." *Aluminate Co. Inc. v. Akme Flue, Inc.*, 10 U. S. P. Q. 221, 222.

The Apparatus Claims. . . . Each one of them contains as an element of its combination 'a septic tank.' . . . The contention of the complainant is this: Cameron introduced the word 'septic' into the art, he defined it and it is used in the claims with the meaning he gave it. The septic tank, therefore, of these claims is the septic tank in which the septic scum and deposit are found, in which the equilibrium above referred to is established, and in which the solids may be indefinitely retained. This is a peculiar structure, produced in part by the hand of man, in part by the forces of nature. After the labors of the mason, . . . are over the microorganisms are set to work, and in the course of from six weeks to two months they add an inside floor and a roof of scum to the masonry structure, whereupon its temporary iron cover may be discarded, and then, for the first, we have the septic tank of the claims. And, because in the prior art there is no masonry (or other) structure which has been thus improved and modified by the action of anaerobic bacteria, this single element of a 'septic tank' is sufficiently novel to uphold each combination into which it enters. . . . The argument is ingenious and forceful, but in this case we do not find it convincing." *Cameron Septic Tank Co. v. Village of Saratoga Springs*, 159 Fed. 463.

## CHAPTER 15

### OF INFRINGEMENTS OF A VALID MANUFACTURE OR COMPOSITION OF MATTER CLAIM IN THE PATENT

A manufacture or a composition of matter may generally be regarded as a product of a process. The latter may or may not be patentable. A patent claim covering a product is infringed whenever the product is made, sold or used without a license. The principal difficulties that have troubled the Courts in interpreting patent claims on products are two-fold. First: Is an alleged equivalent to be deemed equivalent within the law of patents? Second: Does the definition of the product in the claim sufficiently identify it as something new?

#### WHAT THE COURTS HAVE SAID

##### I. In General

“The real question in the case is more truly stated as follows: Does the substitution of gunpowder, as used in the Vulcan powder in combination with nitro-glycerine, in the place of the infusorial earth or other absorbent described by Nobel, make the combination a different and not an equivalent compound, because when gunpowder is used as an absorbent, in addition to fulfilling every condition and performing every function of the absorbent in the dynamite compound up to the time of the explosion and at that time, it then has the additional function of co-operating, by means of its conversion into gas, with the nitro-glycerine in rending the rock, instead of remaining, like the infusorial earth, an inert substance? . . . The books are full of cases proving that when a sub-

stitute is used for one ingredient in a patented combination which has every property and performs every function of the original in the combination, it does not cease to be an equivalent because, in addition, it does something more and better." *Atlantic Giant Powder Co. v. Goodyear*, 13 O. G. 45.

"Every patent for a product or composition of matter must identify it so that it can be recognized aside from the description of the process for making it, or else nothing can be held to infringe the patent which is not made by that process." *Cochrane v. Badische Anilin and Soda Fabrik*, 111 U. S. at 310.

"The plaintiff's case rests exclusively upon the alleged correspondence in physical qualities between the Jensen pepsin and the defendant's. At the most, however, such evidence only makes out a *prima facie* case of infringement." *Carl L. Jensen Co. v. Clay*, 59 Fed. at 291.

"What the evidence before us shows is, that it is in chemical characteristics the exact article that appellee has patented. The fact that the 'ear marks' showing this are chemical instead of physical, such as color, shape or the like, . . . makes no difference. They are none the less, so far as the facts in this case have been brought to our attention, true 'ear marks' of aspirin . . . and therefore, in the absence of explanation, at least, establish identity. In other words, aspirin stands upon the facts before us, as a new article of manufacture produced by appellee's patent, and the product sold by appellant . . . as identical." *Kuehmsted v. Farbenfabriken of Elbfeld Co.*, 179 Fed. at 705.

"The process and the product are substantially one . . . discovery. . . . Consequently . . . it is necessary . . . to limit the scope of the claims to a product which is the result of that process. . . . The material steps . . . are: (1) Coating . . . (2) winding . . . (3) brushing or carding the asbestos yarn or strand while on the wire, in order to raise a nap and lay the fibers in one direction;



(4) compressing . . . (5) applying . . . a . . . shield. All of these steps were old except the third, and the gist of the invention was in that third step. . . . The defendant raises no nap. . . . Not infringed." *Downes v. Teter-Heany Development Co.*, 150 Fed. at 123, 124, 125, 128.

"The range allowed should 'always be commensurate with the real scope of the advance in the art contributed by the patentee.' . . . A pioneer patent is entitled to a 'liberal construction and a broad range of equivalents.' . . . Under this doctrine plaintiff is plainly entitled . . . to a holding that a protective coating of crushed slate is the equivalent of a similar coating of soapstone." *Bird v. Sears, Roebuck and Co.*, 299 Fed. at 576, 577.

"In the Patent Law equivalents are a variable quantity." *Guaranty Trust Co. of N. Y. v. Johns Manville Corp.*, 31 U. S. P. Q. 161.

"It is not enough to prove infringement of a patent for a composition of matter to show that someone else has made, by using different ingredients, a composition having the same useful qualities." *Kaumagraph Co. v. Superior T. M. Mfg. Co.*, 72 Fed. (2) 418.

"Cement is any compound which is plastic under certain conditions and under others develops tenacity and can be used for holding together various materials." *Brunswick-Balke Collander Co. v. Seamless Rubber Co.*, 32 Fed. (2) 220.

"He says: 'The subject hereinafter described is a dry-grained, free-running powder, containing as high as, say, 20 per cent of nitro-glycerine. . . . Conceding that Schrader may have been the first to produce a powder that was free-running by the use of certain ingredients, that fact does not block the way against every effort to produce a free-running powder by means that are substantially different, and at variance with Schrader's proposed methods. . . . He taught that high-grade powder could be made having a free-running capacity. He neither taught nor claimed that a low-grade powder of that ca-

capacity could be made. The fact that the powder of Schrader's patent and the powder manufactured by respondent have this one point in common cannot obliterate the marked distinctions between them in ingredients and mode of manufacture. . . . Infringement has not been shown." *Atlantic Dynamite Co. v. Climax Powder Mfg. Co.*, 72 Fed. at 930, 935.

"No patent covers all the inventive conceptions of the patentee . . . but only such device, within the reasonable rule of equivalents applicable, as he describes and claims. . . . No doctrine of functional efficiency can . . . include a stencil having a binder and a tempering agent which is different from that used by Hill." *A. B. Dick Co. v. Duplicating Machine & Supply Corp.*, 72 Fed. (2) 270.

"That the defendant's end product is substantially the same as Donner's, is apparent. The process used is not identical with that of Donner. Donner prepares his depilating agent before mixing with it his colloid or colloid-like material. The defendant, instead of using calcined magnesia to make the cream depilatory, uses ultra-fine hydrate of lime. This lime is mixed with water to form a cream before any hydrogen sulfid is infused. After the mixture is made, hydrogen sulfid is forced through the mass, which is agitated and the hydrogen sulfid is absorbed by the water, which is held in suspension in the mass. Thus the difference between the two processes is that Donner forms his depilating agent before incorporating it into the vehicle which holds it in suspension, while the defendant prepares the vehicle which holds lime water in suspension, and then forces the hydrogen sulfid through it, which turns the lime water into the depilating agent. The defendant argues that to add sufficient ultra-fine lime hydrate to form a cream is doing nothing more than to follow the teachings of the prior art; but, in our opinion, the defendant does nothing more than follow the teachings of Donner, because that portion of the lime hydrate which is not dissolved by the water constitutes simply the ve-

hicle which holds the liquid depilatory in suspension in the same way that the calcined magnesia of Donner holds his liquid in suspension." *Donner v. Sheer Pharmacal Corp.*, 17 U. S. P. Q. 123, 124.

"McManus was the first to perceive and disclose to the world the use of a heat fusible cement to stick the center spot to the cork, and it is immaterial that neither the plaintiff nor defendant uses the particular kind of thermoplastic bond that McManus gave as an illustration." *Crown Cork and Seal Co. v. Ferdinand Gutmann*, 14 Fed. Supp. 258.

"It may well be that the combination discovered by Blackmore was novel and is useful for the purpose of conveniently disinfecting by means of formic aldehyde. The patent granted to him, however, does not, upon its face, entitle the complainant to a monopoly which will prevent any and every use of formic aldehyde and essential oils by others in the preparation of other compounds. In the case of a patent for a composition of matter, the question of infringement depends upon sameness or equivalence of ingredients and upon substantial sameness of the proportions of those ingredients. Addition to a patented composition of matter of an ingredient which the patent purposely avoided and which, when added, substantially changes the character of the composition, avoids infringement. . . . In short, the defendant is using a disinfectant whose functions were well known prior to the Blackmore patent with a fragrant oil to conceal the odor of the formic aldehyde, and, even though the oil carries some formic aldehyde, that fact is not sufficient to involve infringement." *Orr v. Aschenbach and Miller, Inc.*, 225 Fed. at 73, 74.

"In the previous case, I supposed that what Gregory had found out was how to produce a self-supporting imitation gold leaf by the combination of two elements: (1) Soluble cotton; and (2) coloring matter. . . . Complainant is reduced to the necessary contention that commer-

cial soluble cotton 'includes everything in the leaf except bronze.' . . . The . . . impurity to be expected in a leaf composed entirely of . . . and . . . would be less than 1 per cent. . . . This would be a leaf 'composed entirely of commercial soluble cotton and bronze.' But it is not defendant's leaf, in which is found at least 8.67 per cent. gum, or at least 15 . . . times the amount of these expected impurities. . . . The third ingredient of defendant's leaf is not an impurity, but an added gum, known in the art as 'elemi.' . . . The addition of gum elemi . . . serves a useful purpose. . . . Not infringed." *Oriental Tissue Co. v. Louis De Jonge and Co.*, 235 Fed. at 296, 298, 299.

"Infringement of the patent in suit cannot be avoided by that which would constitute an improvement where the patented invention is being appropriated." *Aerovox Corp. v. Micamold Radio Corp.*, 15 Fed. Supp. 285.

"The complainants cannot successfully claim to be the first to compound glue, glycerine, and sugar; but they may claim to have discovered that these elements may be combined in such proportions as to yield a new product. . . . The distinctiveness of the complainants' invention must in like manner be determined by its inherently new and useful attributes. . . . Exact conformity to these proportions is not required . . . and the right is claimed to vary them. But this right is not unlimited. . . . Substantial identity of result is the test of substantial conformity to the mode of combination prescribed in the specifications. The respondents deny . . . that they have conformed to the proportions. . . . Bill . . . dismissed." *Loutrel v. Mellor, et al.*, 1 O. G. 48.

"A patent for a composition of matter covers the composition described and claimed, but not every use or function of it. . . . It is not sufficient to make out a cause of action in a suit for the infringement of a patent for an improved composition of matter to show that both it and the claimed infringement may fairly bear the same de-



scription in terms of use and function.” *Kaumograph Co. v. Superior Trade Mark Mfg. Co., Inc.*, 23 U. S. P. Q. 60, 61.

“If there be any current Rinso soap with 15 per cent. or more of dust or which has a limit (say 50 per cent.) of particles which are not hollow and globular, then infringement of the product claims is not disclosed. In construing the qualities, globular and hollow, their purpose must be considered. Substance, not form, thought not words, must control the court’s decision. All particles need not be hollow nor globular.” *Colgate-Palmolive-Peet Co. v. Lever Brothers Co.*, 33 U. S. P. Q. 308.

“We are of opinion that Adamite is what it is said to be, namely, ‘a new article of manufacture,’ different from but similar to both cast iron and steel, that its production involves invention. . . . A person may pursue the formula and not get Adamite. Then he does not infringe. Or he may pursue the formula and get Adamite. Then he does infringe. The principal question upon the issue of infringement, therefore, is, not whether the defendant’s product was of the analysis of the patent, but whether the defendant’s product was the product of the patent. . . . If it got Adamite, then we must decide the question of equivalents in order to determine whether it got it in the way the patent taught.

. . . The physical characteristics of true Adamite are many and pronounced. . . . For proof that Phoenix Metal is Adamite . . . the plaintiff produced no proof that Phoenix Metal is a tool steel . . . that its action under cutting tools or under the acetylene torch is like that of Adamite; that like Adamite it lacks elasticity . . . that Phoenix Metal is forgeable. . . . In cutting rolls made of the two metals, different lathes are required. . . . It was difficult to believe that the defendant’s continued use of sulphur in substantially the same high proportion, was an equivalent of or a substitute for a deficiency in the chromium proportion of the patent. . . . The very center



of the issue of infringement, we think the complainant failed to prove." *Pittsburgh Iron and S. F. Co. v. Seaman-Sleeth Co.*, 248 Fed. at 709, 710, 712, 713, 714, 717.

"The question of infringement depends on whether defendant's addition of 15 parts of iron and 8 of manganese to the nickel-chromium alloy of the patent substantially changes it, not in weight, ductility, capacity to be drawn or rolled, or any other non-electrical property, but in its properties when placed in an electrical circuit as a heat-producing element. . . . It appears from defendant's testimony that it secured two specimens of the Marsh material for examination, and analyses were made. . . . They then tried an alloy . . . and found it exceedingly durable and of high resistance. The iron was used to get within the Placet disclosure, and outside Marsh; a proceeding entirely permissible and proper though somewhat hazardous. . . . Decree for plaintiff." *Hoskins Mfg. Co. v. General Electric Co.*, 212 Fed. at 432, 433, 434.

"Patentee plainly stated in his specifications that cobalt from 1 per cent. to 6 per cent. was an essential element in his formula and it is so made in each of his claims. The fact that appellees have produced an approaching, similar result by adding molybdenum, of the chromium group, instead of a part of the cobalt, gives appellant no ground to claim the use of molybdenum as an equivalent. It is only entitled to the formula claimed in its patent." *Darwin & Milner v. Kinite Corp.*, 22 U. S. P. Q. 63.

"Lederer knowing nothing of drawn wire or radio filaments, taught in his patent that an uncertain amount . . . of thoria . . . would so influence the crystal structure of the filament as to retard or prevent offsetting. . . . The defendant uses a drawn wire filament which contains a small but scientifically exact, quantity of thorium . . . in the manufacture of radio tubes which are not lamps. . . . The plaintiff asserts infringement . . . To uphold such a contention . . . would necessitate a disregard of the in-

tendment of the patent law.” *Westinghouse Lamp Co. v. C. E. Mfg. Co.*, 32 Fed. (2) 621, 622.

“The validity of these claims depends wholly upon whether it is, or is not, invention to use raw gypsum. . . . The defendant’s compound when first mixed, does contain 15 per cent of raw gypsum. . . . It is then mixed . . . and subjected to a heat . . . varying from 150 degrees Fahrenheit . . . to 240 degrees . . . This results in . . . partial calcination of the raw gypsum.” *Church v. Alabastine Co.*, 14 Fed. (2) 664, 666, 667.

“Referring generally to the plaintiff’s claims of identity . . . Kendymag accomplishes more results . . . is not condensed at all; it is enlarged. . . . Magdolite retains substantially the solid crystalline structure of its initial dolomitic rock; but Kendymag loses the crystallization of the initial dolomite in the process of burning and is transformed into a material that is amorphous and porous. . . . Magdolite . . . ‘is much heavier, volume for volume, than any manufactured dolomite heretofore produced.’ . . . But the defendant’s product . . . is about 28 per cent. lighter than the patented product. . . . Defendant’s process for making its product was taken evidently from the cement art. . . . In the process of making it dolomite with its rock-like and crystalline characteristic is destroyed and a new product is obtained having no resemblance to the original. . . . If Kendymag is not dolomite it cannot infringe the patented product which is dolomite.” *J. E. Baker Co. v. Kennedy Refractories Co.*, 253 Fed. at 743, 744.

“The defendant contends that in making them there was no infringement either of the process or of the product claims, because the spot welds uniting their parts are not surrounded by unwelded areas, but . . . on the contrary . . . form practically continuous lines; and because they were made by the operator one after the other, each before its predecessor had time to cool, so as to form what is in effect a ‘line’ as distinguished from a

‘spot’ weld. . . . There are enough isolated spot welds to prevent the conclusion that the skates do not infringe.” *Thomson Electric Welding Co. v. Barney and Berry, Inc.*, 239 Fed. at 149.

“Swan constructed a plate with perforations or cells extending through it, and then packed the material in the perforations. Defendants arrange pastilles or buttons of the material in a mold, and then cast the plate around them. Manifestly, the result is the same. . . . Defendants also insist that the material which they use is not active . . . and that it does not become active the moment it is placed in the battery fluid, but requires further electrolytic treatment before it becomes active. But the patent is not confined to active material. . . . Infringement is clear.” *Accumulator Co. v. Edison Electric I. Co.*, 63 Fed. at 981.

“In his final amendment of the specification he seeks to differentiate his invention from ‘mince-pie compounds . . . in the wet state with free water present.’ . . . As thus construed, there is no infringement in a compound where there is added 140 pounds of boiled cider to every 1,200 pounds of the other ingredients.” *Dougherty v. Doyle*, 63 Fed. at 476.

“It is also plain that the claims are not infringed unless all of the ingredients of the detergent are previously dried. . . . I do not lose sight of the fact that it elsewhere appears that defendants’ soap is prepared by a process which makes it thoroughly dry and that ammonia as now sold in the market is drier than in 1882. . . . I am not satisfied that this patent has been infringed.” *Columbia Chemical Wks. v. Rutherford*, 58 Fed. at 791.

“The defendants . . . do not use, and never have used, cut hemp in any form. . . . The patentee . . . makes his claim for the combination of the various ingredients named with fine cut hemp and boiled linseed oil, so . . . the complainant has limited himself to a combination in

which cut hemp must be used.” *Otley v. Watkins*, 36 Fed. at 323, 324.

“In claim 4 it is provided that the product shall melt at about 207 degrees centigrade. . . . I cannot think that a product is affirmatively shown to have a melting point of about 207 degrees when there is no proof of when it will melt at that heat, and there is proof that it will not melt at 220 degrees. . . . Claim 4 not infringed.” *Parke-Davis and Co. v. H. K. Mulford Co.*, 189 Fed. at 100.

“Nor is celluloid an equivalent for hard rubber . . . it is not capable of vulcanization. . . . It cannot be made into a plate by the process prescribed by Cummings. . . . A celluloid dental plate is not an infringement of the Cummings patent.” *Goodyear Dental Vulcanite Co. v. Davis*, 102 U. S. at 230.

“This defendant has done no more than produce a cheap machine-made lens, possessing, and acknowledging the possession of that very ‘zone of aberration’ which is sure to produce the ‘prismatic effects’ that have been avoided by Conner’s scientifically accurate patented product. . . . Evidence of infringement is quite insufficient.” *One Piece Bifocal Lens Co. v. Stead*, 280 Fed. at 384.

“The specification . . . indicates that when the pyroxyline is not reduced to a pulp a process of mastication under heated rollers may be substituted for the pressure in heated molds, it does not call for any change in the composition of the solvent when so used. The word ‘latent,’ as used in the claim, therefore, cannot be held to cover liquid solvents which are not, ‘like the solid, latent’ at ordinary temperatures. . . . As the defendants, therefore, use neither . . . nor mix . . . nor use any liquid solvent ‘which, like the solid, is latent at ordinary temperatures,’ they cannot be held to infringe.” *Celluloid Mfg. Co. v. Cellonite Mfg. Co.*, 42 Fed. at 908.

“The defendants did not buy such dag and sell it, but their infringing act consisted in mixing it as a colloid with a penetrant and lubricant to form the combination which Abbott disclosed.” *Polygon Products Co. v. Kant-Rust P. Corp.*, 2 Fed. (2) at 247.

“Sawdust and tar had never before been combined in the manner described in the patent. Wyckoff . . . made tarred wooden pipe a practical reality. . . . The proposition that the defendants do not infringe because the method adopted by them of rolling the tarred pipes in sawdust is not covered by the patent, cannot be maintained. . . . Neither can the defendants escape the charge of infringement because they use auger borings instead of sawdust.” *Hobbie v. Smith*, 27 Fed. at 659, 660.

“The defendants . . . use a wire spiral or core, which they cover with cotton braid oiled with boiled linseed oil. . . . The tube thus formed is immersed in a vessel containing a compound of glue, glycerine, soap, borax, and sulphate of iron. . . . The function of the glue is to make the tube gas-proof, of the glycerine to make it flexible. . . . The compound thus composed is not an infringement of the complainant’s patent. It is not saturated with glycerine to the degree required by the patent process. It is not sufficiently saturated to render it impervious to gas, but is composed of an ingredient impervious to gas, which is treated with glycerine in order to make it pliable.” *Union Tubing Co. v. Patterson Co.*, 23 Fed. at 81.

“The claim . . . ‘A fabric . . . having outer sheets or layers of celluloid, and an interlining of textile or fibrous material.’ . . . Upon one side of a fabric of two layers of muslin with an interposed layer of paper . . . Zylonite Company attached a layer of Zylonite. . . . The Taylor and Tapley Company . . . turns over the fabric at the edges. . . . There is a surface of zylonite upon both sides at all the edges of the collar. . . . Defendants



infringe.” Celluloid Mfg. Co. v. American Zylonite Co., 35 Fed. at 418, 421.

“The invention consists in dividing the pavement into blocks, so that one block can be removed and repaired.’ . . . The division of the upper one, while plastic, . . . on a line co-incident with the line between the sections in the lower layer, so as to control the cracking . . . ‘is within the patent.’ . . . Marking the upper course with a cutting instrument to the depth of about one sixteenth of an inch, for ornamental purposes, was not an infringement. . . . The defendant Perine could have marked his pavement for ornamental purposes, and have avoided coincidence with the line between the sections. He did not avoid this coincidence, but selected it and attained thereby objects of the patent, and . . . infringed.” California Artificial Stone P. Co. v. Starr, 52 Fed. at 298, 299, summarizing Hurlbut v. Schillinger, 130 U. S. 456 and California Artificial Stone P. Co. v. Schalicke, 119 U. S. 401.

“Tibbe was the first person who conceived the idea of filling the exterior interstices of the cob so as to render the pipe more durable. . . . He is accordingly entitled to a liberal interpretation of his claim. . . . When liquid shellac is applied to the exterior surface of the cob, according to the process now in use by the defendants, it penetrates, to some extent, into the finely pulverized corn meal with which the interstices have previously been filled. . . . Infringement is established.” H. Tibbe and Son Mfg. Co. v. Missouri Cob-Pipe Co., 62 Fed. at 159, 160.

“The patentee distinctly states in his specifications that his compound is formed ‘substantially of pipe clay, or any other suitable clay, and porcelain earth, or its equivalents.’ . . . The fine sand . . . is the equivalent of the baked porcelain earth. . . . The two filtering compounds are almost identical in appearance. . . . A fair

presumption of infringement.” *Blount v. Societe Anonyme du Filtre, etc.*, 53 Fed. at 104, 105.

“It is true that the infusorial earth is described as a porous substance, and is supposed to hold the nitro-glycerine suspended in the pores by capillary attraction, but it must also hold it in suspension by coating and adhering to the exterior surfaces of the particles. The mica scales, on the other hand, are supposed to hold the nitro-glycerine in suspension only as it is painted or coated on the exterior surfaces of the minute scales. . . . They each take up and hold by cohesive or molecular action, and each without chemical action or reaction, the nitro-glycerine in the compound. The mixture is a mechanical one . . . and the functions are the same. . . . Nobel uses . . . mono or di-nitro-glycerine. Mowbray uses . . . tri-nitro-glycerine. . . . The substances are substantially the same in kind . . . differ only in degree.” *Atlantic Giant Powder Co. v. Mowbray*, 12 O. G. III.

“The material . . . employed . . . is a clay having the distinguishing characteristics of bentonite in that it is extremely slimy when wet, requires a large amount of water . . . great viscosity . . . and the ability to produce emulsions that are brown rather than black. . . . The defendant . . . has infringed.” *Patent and Licensing Corp. v. Bituect, Inc.*, 21 U. S. P. Q. 144, 145.

“The asphalt emulsions made and sold by the defendant . . . when dried without agitation develop a honeycomb structure of such stability . . . and the defendant has used a much smaller quantity of the emulsifying agent producing a much better defined honeycomb. . . . The defendant . . . has infringed.” *Patent and Licensing Corp. v. Bituect, Inc.*, 21 U. S. P. Q. 145.

“The narrow claims call for and name tempering agents, such as oil: ‘castor oil,’ ‘vegetable oil.’ The broad claims . . . call merely for a tempering agent. . . . The art knew what a tempering agent was. . . . The court construed broad claim 18, calling generally for a temper-

ing agent, as covering the tempering agent of oleic acid (red oil).” *Arlac v. A. B. Dick Co.*, 8 U. S. P. Q. 401, 402.

“The gist of the patent is the use of cinders and ash as a whole. . . . This defendant . . . goes over to Straub when it reduces its cement and increases its cinder content and at the same time reduces its asbestos content where sand is used. These changes cause the finished product to have the functions and characteristics of the Straub block, which characteristics and functions they would not have if the Atterbury patent were followed. I . . . find . . . infringement.” *Crozier-Straub v. Rockland Concrete Products, Inc.*, 20 U. S. P. Q. 40, 41.

“The patentee was the first to achieve what had been realized as desirable, and he is entitled to a patent for the product as set out in the claim, for it is the duty of the court to avoid, if it reasonably can, a construction confirming the patent to the precise method of manufacture which it describes.” *Therorz Co. v. United States Ind. Chem. Co.*, 14 Fed. (2) 635.

“Using . . . a well-known alloy, ferrochromium, and treating it with special precautions, they succeeded in producing a steel product . . . with the entirely novel characteristic of stainlessness. . . . Their claims should not be extended to articles in which the quality of stainlessness is of no importance. . . . Haynes did not intend to confine his claims to those articles which alone should be perfectly stainless. . . . His specifications . . . showing . . . variable characteristics of the combinations possible within the field of the claims. . . . The defendant’s Nevastain steels are stainless within the sense of the Haynes patent. . . . The effect of the master’s ruling would be to confine the Haynes patent to those steels which became stainless when air-cooled. I find in the patent itself no such intention.” *American Stainless Steel Co. v. Ludlum Steel Co.*, 16 Fed. (2) 826, 827.

"The patent calls for a product merely substantially pure, a matter not of 99 per cent., or greater purity, but of substantial variation. Whether the product of the defendant be  $\text{Fe}_3\text{O}_4$  or quasi  $\text{Fe}_3\text{O}_4$ , a definite chemical compound or a double compound, it has all the physical properties of  $\text{Fe}_3\text{O}_4$ , and when substantially pure, 80 per cent. or upwards, the new and valuable results are obtained. . . . It is obvious that there was a valid patent, which was infringed." *Goldschmidt Thermit Co. v. Alumino-Thermic Corporation*, 25 F. (2) 201, 203.

"Experience demonstrated the desirability of counteracting what is known as 'offsetting' . . . one of the means . . . employed is to introduce the rare earth oxide known as 'thoria.' It is contended that thoria does not cohere, and that the tungsten is not pure nor homogeneous, and hence that there is not infringement of the claims. These claims are as follows: . . . 'consisting of tungsten in a coherent metallic state and homogeneous throughout.' . . . Thoria . . . does not have any chemical effect. . . . Such terms as 'pure' and 'homogeneous' were employed in contrast with the impure, composite filaments of the prior art. . . . Infringed." *General Electric Co. v. Alexander*, 277 Fed. at 292, 293, 294.

"He said 44 meters was the speed discovered by him to be best. . . . Uniformity in rate of travel under the style is the only possible method or manner of obtaining anything useful out of MacDonald's disclosure. . . . We decline to construe the claim as applicable to a product not made and used at a uniform rate of revolution under the style." *American Graphophone Co. v. Gimbel Bros.*, 240 Fed. at 976.

"Their theory is that the introduction of bromine gas into a globe only partially exhausted is the substitution of a newly-discovered ingredient for the air exhaustion of the Edison patent. . . . That theory . . . does not seem to me to be supported by the facts. . . . The amount

of gas admitted . . . small.” *Edison Electric Light Co. v. Waring Electric Co.*, 59 Fed. at 362, 364.

“The defendants . . . use a wax whose fusion point is 165° F. and their insistment is that as Broderick described the wax he uses, preferably, as having a fusion point at 120° F., it follows that the wax they use is much harder. . . . But the fusion point of the wax used is not the test of hardness. The true test is, will its particles move readily under slight pressure. If so, it is ‘soft.’ That the wax used by the defendants has this characteristic of softness cannot be denied.” *A. B. Dick Co. v. Pomeroy Duplicator Co.*, 117 Fed. at 155.

“What the defendants call glukodine is a compound made by a mechanical mixture of nitro-glycerine with nitro-saccharose, (or nitrated sugar) and is not a new chemical compound; that the constituent nitro-glycerine is shown to be separable, as such, from the constituent nitro-saccharose. . . . The nitro-glycerine is so availed of as to produce practically the same effect as if it were not mixed with any nitro-saccharose. . . . Infringement.” *Atlantic Giant Powder Co. v. Dittmar Powder Mfg. Co.*, 9 Fed. at 316, 317.

“By ‘regular intervals’ we are to understand intervals that conform to a prescribed rule. . . . The intervals are not required to be equal, but regular, and this is satisfied by any repeated group or pattern. . . . Infringement. . . . Made out.” *Hanifen v. Armitage*, 117 Fed. at 850, 851.

“Should someone hereafter discover that in the bones or scales of certain fish or in the root of some shrub there was a principle possessing all the physiological characteristics of the suprarenal glands, and should this discoverer, by some process wholly unlike Takamine’s isolate that principle in the form of a substance which met the requirements of this claim, it might be held to infringe. So too, if some one, without making use of any suprarenal glands, should chemically combine . . . a syn-



thetic duplicate of the substance called for by this sixth claim, such substance might be held to infringe this claim. . . . We are averse . . . to answer. . . . It is not necessary to pass upon." *Parke-Davis and Co. v. H. K. Mulford and Co.*, 196 Fed. at 499, 500.

"Fleming's disclosure was . . . a detector only. . . . Is Fleming entitled to the benefits of the device as a generator of oscillations. . . . The courts will not restrict the claim to one attribute, to the exclusion of the reversible attribute. . . . The so-called oscillion of defendant infringes." *Marconi Wireless T. Co. v. De Forest Radio T. and T. Co.*, 261 Fed. at 394, 395.

"Infringement is denied because their apparatus is not intended for use 'with a sound record formed in wax or a wax-like material,' but with the sound record now commonly in use and called a 'metallic soap record.' . . . The criticism in regard to the material is not well founded." *American Graphophone Co. v. Leeds*, 87 Fed. at 878.

"The meaning of the word 'maltha' may fairly and justly be taken to be that . . . in the specification of the patent in suit. . . . Mr. Bird, it appears, employs a material which is known as 'petrocite.' . . . The patentee had no knowledge of petrocite . . . but such ignorance does not have the supposed restrictive consequence. . . . 'A patented manufacture is infringed by the making, use, or sale of any manufacture which possesses the same essential characteristics.' " *Standard Paint Co. v. Bird*, 65 Fed. at 510, 511.

"The fibrous asbestos wool which the defendant employed in making his sealing composition may not be produced by grinding mechanism. . . . To all intents and purposes it is the 'finely-ground fibrous material' of the first claim of the Coddington patent. . . . 'Stearic acid is a fatty or oily substance.' . . . Infringement . . . is shown." *Propfe v. Coddington*, 108 Fed. at 86, 87.

"There are two schools of thought. . . . Some hold the view that, if the product is novel, subsequent new proc-

esses must be tributary. Others believe that such a doctrine tends to arrest invention, and more especially where the process . . . practically revolutionizes the commercial manufacturing art. . . . 'The object . . . is a pure tungsten filament.' . . . The fact that later some one found another and better way to manufacture the product does not, in this case, affect the validity of the patent, which originally disclosed the product and at the same time described operative means for obtaining it. . . . Infringed." *General Electric Co. v. Laco-Philips Co.*, 233 Fed. at 105, 106, 107.

"What the patentees told metallurgists was that stainlessness might and would be attained by the making of low-carbon and (comparatively) high-chromium alloys when . . . 'special precautions' were taken. . . . Omitting silicon, defendant has produced stainless steel; with the silicon added, it has also produced stainless steel; therefore, in respect of infringement, the silicon is immaterial. . . . Defendant's product is within the disclosure." *American Stainless Steel Co. v. Ludlum Steel Co.*, 290 Fed. at 107, 109.

"His invention consists in a composition of the following metals, to wit: lead, zinc, tin, and antimony, for the purpose of forming a steam-tight packing. . . . An equivalent of any substance is another substance having similar properties and producing substantially the same effect. Whether in such a composition as this, copper is an equivalent of zinc, is a question of fact for you to decide from the evidence if you consider it material." *Matthews v. Skates*, 1 Fish. 602.

"An unsubstantial or colorable alteration in a machine or a compound does not protect an individual from the character and consequence of an infringer. Where the machine is constructed, or the compound formed, on the same principle, however varied in form, there is an infringement. In a machine where the same powers are employed, with only formal alterations as to the size or

position of the machinery, to produce a certain result, the principle of the machine remains the same. And so of a compound, where the ingredients are the same, and the change is merely in the mode of combining them. Or where there is a substitute of one ingredient, having the same qualities and producing the same result, being within the scope of the claim." *Allen v. Hunter*, 6 McLean, 303.

"The powder of the defendants . . . is composed of fifty-six parts of nitrate of soda, fourteen parts of charcoal, and thirty parts of nitro-glycerine. . . . Stress is laid on the fact that a compound made of thirty per cent. of nitro-glycerine and seventy per cent. of infusorial earth will not explode, while the defendants' compound will explode, although it has but thirty per cent. of nitro-glycerine, and its gunpowder ingredients will not absorb a greater amount of nitro-glycerine. But it is a plain direction of the patent that an absorbent must be used which will absorb and retain sufficient nitro-glycerine to make the compound explodable . . . at the place of designed use. . . . It is . . . of no consequence that a particular proportion of nitro-glycerine, with a particular absorbent, will not make a compound explodable by detonation, such compound being outside of the patent." *Atlantic Giant Powder Co. v. Parker*, 16 O. G. 495.

"That acetone in a paint and varnish remover is a recognized chemical equivalent of a variety of alcohols, including methyl or wood alcohol. . . . The authorities uniformly hold that the word 'equivalent,' as applied to a chemical action may mean a fluid which is 'equally good' with that specified in the patent. . . . After the patentee pointed out the process and indicated the ingredients which would create a definite chemical reaction of the compounded elements, it was not difficult for others familiar with the science of chemistry to find an equally good substitute for the essential element of complain-

ants' product." *Chadeloid Chemical Co. v. Frank S. De Ronde Co.*, 146 Fed. at 992.

"The composition of all the halvah made was substantially like that of the Gordon patent, except for the admixture of less than 3 per cent. of corn oil. The proportions in the plaintiff's patent were expressly stated to be only approximate, and the addition of so trifling an amount of corn oil could not have been for any honest reason." *Gordon v. Turco-Halvah Co.*, 247 Fed. at 491.

"The substance of the complainant's invention consisted in the employment of an elastic packing for joints and valves, of a crude, burnt, refractory rubber compound . . . containing forty per cent. or more of refractory mineral matter, cemented together by vulcanized rubber. . . . The defendants use, in addition, about ten and a half per cent. more of metal and about three and one-half per cent. more of sulphur. . . . Injunction." *Jenkins v. Walker*, 1 O. G. 359.

"The vehicle used by defendant is substantially for this purpose the same as complainants. He uses the same protective agent—the oxide of copper; and the Brandon red which he uses, being an oxide of iron associated with more or less of earthy matter, and which, by its imperfect solution in sea-water, retards the solution of the oxide of copper, is, in operation in the combination, the equivalent of the mineral or earthy base in complainants' composition." *Tarr v. Folsom*, 5 O. G. 92.

"Sulphuret of antimony . . . comes within the description of the retarding earthy or mineral basis described . . . constitutes infringement, notwithstanding to the oxide of copper is added a small quantity of arsenite of copper, or arsenate of copper, or both." *Wonson v. Peterson*, 13 O. G. 548.

"Russell, having discovered that cement material generally possesses the qualities required for his conception of a homogeneous digester lining, should not be limited to such materials in the class of cementitious mixtures as

he had chemically and commercially isolated as individuals, but . . . his claims and description should be construed as including all cementitious mixtures which ordinary skilled practical chemists might be expected to find as answering the requirements of the described conditions, or such as would naturally develop in the growth of the art without invention." *American Sulphite Pulp Co. v. Howland Falls Pulp Co.*, 80 Fed. at 410.

"Then it is further said that defendants' article is made differently from the patented process, in that newspaper pulp is utilized to serve as a binder, omitting the use of sawdust, with the result that the board is lighter and stronger; and, furthermore, in making the wall board, dextrin is added to the gypsum, not to obtain adhesion of the paper liners to the gypsum core, as in plaintiff's patent, but solely to prevent the soft gypsum from protruding or overlapping the edges, in manufacture, or exposing the edge of the board. . . . I do not think the use of dextrin in defendants' admixture patentably differentiates the process in suit or results in a materially different article. In both processes gypsum, carbohydrate material, water, and paper liners are necessary to make the board. Dextrin gums or sticks the paper liner to the core, or in an important way contributes thereto. . . . The use of dextrin by defendants . . . constitutes a carbohydrate within the terms of the patent." *Universal Gypsum & Lime Co. v. Haggerty*, 21 Fed. (2) 546.

"The applicants, at the time of the filing of their application . . . by their own confession, had tried and failed to make a plug with an inner tube of mica. . . . They were hardly entitled, at the date of their application, to include under the term 'nonporous vitreous material, preferably glass,' mica, which they had been unable to apply." *Folger and Moriarty v. Dow Portable Electric Co.*, 128 Fed. at 47.

"The defendants use a film of powdered silver for the conductors passing through the glass. . . . The argu-



ment of the defendants is that this claim of the Edison patent must be limited to the use of platinum wire as a conductor, or its known equivalent, and that powdered silver was not a known equivalent at the date of the Edison patent. . . . The fundamental question is whether the alleged infringer makes use of the essence of the patented invention; not whether he has adopted a known equivalent, or made a patentable improvement on the invention." *Edison Electric Light Co. v. Boston Incandescent Lamp Co.*, 62 Fed. at 398, 399.

"It has been argued that inasmuch as the packings in question were intended to be used at the temperature of steam heat, the employment of vulcanite instead of soft rubber, as the skeleton of the packing, was simply the use of a known equivalent in place of the soft rubber which forms the skeleton of the Jenkins packing. But such a conclusion by no means follows . . . when it also appears that a packing, the skeleton of which is vulcanite instead of soft rubber, when used at the temperature of steam heat, displays properties not possessed by a packing, the skeleton of which is soft rubber. . . . At the temperature at which these packings were intended to be used the Johnson packing does not lose the toughness or close grain; does not flake or crumble, as the Jenkins packing does. . . . A different product is obtained. . . . Leaves no room to contend that the Johnson packing is obtained by simply employing a known equivalent. . . . Plaintiff has failed to prove infringement." *Clarke v. Johnson*, 4 Fed. at 439, 441.

"Plaintiff's patent tells us to use an insoluble salt of a fatty acid and no glycerine or other like-water-attractile substance. . . . The defendant claims that, because his product is in a paste, it does not come within the claims of the plaintiff's patent. . . . Infringement is clear." *Medusa C. Waterproofing Co. v. Ceresit Waterproofing Co.*, 271 Fed. at 123, 124.

“Had he been the first discoverer of the use of petroleum products in soap . . . but as he was not, he is only entitled at the most to the particular form which he discovered the use of and patented. . . . Vaseline is . . . an uncharred residuum, but is not the residuum of the plaintiff’s patent.” *Parsons v. Colgate*, 15 Fed. at 603, 604.

“The patent does not cover or include a digester with a lining made of a material or mixture other than cement or of the nature of cement. . . . The patented cementitious material of which defendant’s lining is made is a new and useful composition, a new and useful discovery, and discloses invention . . . is not one ‘which ordinary skilled practical chemists might be expected to find as answering the requirements of the described conditions,’ . . . nor is it ‘such [a cementitious mixture] as would naturally develop in the growth of the art without invention.’ . . . It is entirely different from anything mentioned, referred to, or described by Russell. . . . Defendant does not infringe.” *American Sulphite Pulp Co. v. Hinckley Fibre Co.*, 217 Fed. at 62, 63, 65.

“Alcohol was never mentioned by Dosselman. . . . Equivalents are mentioned for paraffin and for benzol, but never for acetone. . . . Acetone . . . whether in the specification or claims is always acetone, and never alcohol or anything else—a strong indication that . . . Dosselman either did not realize the equivalency of alcohol, or feared that, if he used it, he might run afoul of the Ellis patent. . . . Not infringed.” *Chadeloid Chemical Co. v. Charles McAdam Co.*, 298 Fed. at 717, 718.

“Furthermore, in answer to plaintiff’s interrogatories defendant stated specifically that it has no knowledge as to the internal construction of any grapes sold by it, or the process of manufacture, or the materials of which they are composed. This is, therefore, not one of those instances of knowingly aiding and abetting infringement of a process patent of which *General Electric v. De Forest*,

28 Fed. (2) 641, relied upon by the plaintiff, is an example." *Emery v. G. C. Murphy*, 19 U. S. P. Q. 83.

## II. Of Infringements of Product Claims Which Define by Process of Making

"The Blumenthal powder cannot be identified except as the result of the patented process, and an analysis of the powder of another manufacturer does not disclose that it was made by that process, except upon the theory and prima facie proof that no other existing process could make it. The defendants satisfactorily proved that the powders . . . were made in general accordance with the process described by Schaffer in 1872. . . . The two processes are not alike. . . . Not . . . infringed." *Blumenthal v. Burrell*, 53 Fed. at 107, 108, 109.

"The first claim of the Holliday patent is not limited to one for the new compound or article of manufacture produced by the process of the second claim. . . . The product can be identified by the characteristics specified. It dyes by the addition of acid to the bath, and retains the original fuchsine color." *Holliday v. Pickhardt*, 29 Fed. at 860.

"We held . . . that the error was harmless, since the skilled workman would himself substitute 'nitrite' for 'nitrate' . . . we would not infer from its presence that it was due to a fraudulent design to mislead. . . . But here there has been an identifying test put into the patent by the solicitor; the patentee accepts such patent, and applied for no reissue . . . and the court is asked to strike out the test altogether. . . . We are unwilling to establish the precedent. . . . We have, then, a case where the inventor has prescribed six tests in his patent, and an alleged infringing body responds to five of them, but fails to respond to the sixth. Manifestly, it is not absolutely identical with the product of the patent, as the in-

ventor has defined that product." *Matheson v. Campbell*, 78 Fed. at 920.

"The patent expressly refers to the machine and says the plates are made by a revolving cutting knife and a flat facing knife working alternately, by which process thin, tough, flexible dishes are made of the same size and shape which may be nested together in the smallest possible compass. A dish having these characteristics and the features covered by the claims is a new article possessing advantages not existing before. . . . Decree for an injunction." *Oval Wood Dish Co. v. Sandy Creek, N. Y. Wood Mfg. Co.*, 60 Fed. at 291, 292.

## CHAPTER 16

### OF PERMISSIBLE AMENDMENTS TO THE PATENT APPLICATION AND THEIR EFFECT ON LATER PROCEEDINGS

The Patent Statute, by implication, grants to an applicant for a patent the right of "altering his specifications." Permissible alterations are termed permissible amendments. Since the Statute fails to answer the question of what amendments are permissible, it is necessary to examine the decisions of the Courts for the answer. As a result of the great value of the inventions involved, there have been many attempts of highly skilled lawyers to rescue inventions buried in poorly drawn specifications, and much ingenuity has gone into formulating the rules which govern the amendment of patent applications. Full discussion of these rules would require a large volume in itself.

Some apparently simple amendments may prove inadvisable, for in some cases the Courts have ruled that an amendment to a patent application may materially limit the scope of the patent. It is, therefore, needful to study briefly what amendments are both advisable and permissible in cases involving chemical inventions.

#### WHAT THE COURTS HAVE SAID

##### I. In General

"It is clear enough that while the application was pending he came to understand the operation of his devices better than he had, and that his first claim was founded on that better understanding. These are the essential facts on which the issue as to whether such new matter



was brought in and claimed as would defeat the validity of the claim must be tested. We think this issue must be determined in favor of the patent. In the case of . . . we had occasion to consider the question of the validity of amendments made while the application for a patent was pending. We there held that the validity of such an amendment depended upon the question whether it brought in original matter, or was of something that might be fairly deduced from the original application. In the first instance the amendment would not be justified; in the latter it would. . . . There can be no legal objection to his so molding his claims as to secure all his invention discloses." *Cleveland Foundry Co. v. Detroit Vapor Stove Co.*, 131 Fed. at 857, 858.

"The appellants moved to dissolve the interference for . . . That there is no adequate disclosure for the employment in claims of that application of the terms and phrases of the counts of the issue, such as (1) 'gum,' (2) 'viscous plastic mass of said colloid,' (3) 'while maintaining said colloidal substance as a continuous phase,' (4) 'hydrophilic colloid,' (5) 'viscous paste of said colloid,' (6) 'in plastic form,' (7) 'continuous phase,' and other terms . . . which do not occur in the Kirschbraun specification as originally filed. . . . The Law Examiner denied the motion." *Trumbull v. Kirschbraun*, 20 U. S. P. Q. 48.

"In view of the examiner's statement that appellants' contention was not supported by evidence or was more a matter of words than of real distinctions, an affidavit of Redman, one of the appellants, was filed and was remanded to the examiner for consideration. This affidavit alleges that tests showed that the fusible non-reactive resin, or intermediate product of the invention in issue, contained from 15 to 35 per cent of free phenol; also that experiments were made in which lime was added to the potentially reactive phenolic resin of the French patent and the product was found 'utterly unsuitable for use in compounding' because the reactive resin gelatinized dur-

ing dehydration and treatment with lime, and the product was lacking in strength. Also that for this reason it was found to be necessary to follow the process of this application and produce the resin in two stages by first producing a non-reactive condensation product containing free phenol, then treating with lime and dehydrating, followed by adding the required amount of active methylene-containing substance to make the resin potentially-reactive. In his supplemental statement the examiner says that the affidavit submits some evidence that the fusible non-reactive condensation product of the application contains some free phenolic body, but he does not think it conclusive as some free phenol might have been liberated by the steps used in the analysis, also that the evidence does not touch the question of distinction between the state of the 'phenolate' in the reference and in the application. In our opinion this affidavit is entitled to more weight than is given it by the examiner. A well-defined distinction over the reference is set forth in the process claims and we are unable to hold with the examiner that they are immaterial or alternative modes of procedure. . . . The decision of the examiner is reversed." *Redman, Weith and Brock*, 10 U. S. P. Q. 68, 69.

"McIntosh disclosed the use of carbohydrates in general and stated that he especially contemplated the use of several which are as a matter of fact water soluble. He selected such a carbohydrate in giving his specific example. We believe he had a right to limit his claims to the latter class of carbohydrates, if forced to do so by the state of the prior art. . . . This question should not be confused with the question of McIntosh's right to make the claims." *Meigs v. McIntosh*, 4 U. S. P. Q. 333.

"By amendment the defendant would change, not only the originally disclosed process of burning pulverized fuel, but as well the principle of the furnace in which that process was to be employed and cause it to function in a different way to produce a different result. Such amend-

ments are invalid." *Bonnot Co. v. Lopulco Systems*, 15 Fed. (2) 852.

"It is . . . claimed that certain elements in the product patents and steps in the process patent were added after patentee observed appellant's commercial structure. . . . Some of these charges are disproved by the record, while the others must be rejected, because the specifications and drawings in the original application were sufficient to support all the amendments that were subsequently made." *American Steel Foundries v. Damascus Brake Beam Co.*, 267 Fed. at 577.

"While the original claims were not as broad as those finally allowed and were evidently drawn without any attempt to include in words the molding pressure, the language of the specifications shows clearly both understanding of the need and use of molding pressure, and indicates Baekeland's intent to include it in his claims. His subsequent amendments were therefore allowable, and there is no reason for limiting the valid range of the patent as issued." *General Bakelite Co. v. General Insulate Co.*, 276 Fed. at 186.

"It is contended that the Smith patent is invalid because the claims were not supported by any supplementary oath; that the application merely refers to fabric material the sides of which are folded over and meet at the center of the pack, and no reference is made to a sheet of flexible material. But this point is not maintainable . . . since the original description was sufficient to fairly include a sheet of flexible material, though the exact words were not used and the amendments made were not descriptive of a different invention than the one sworn to." *Floyd Smith A. E. Co. v. Irving Air Chute Co.*, 276 Fed. at 838.

"I know no limit upon an applicant's right to build claims upon his actual invention, and to keep on building them as his own comprehension of his own achievement grows upon him, provided that he first and in his original

application described his achievement in terms justifying his largest ultimate claims. It is immaterial that he did not see all there was in his described means or method when his solicitor first proposed claims. If, however ignorantly (and luckily), he filed a sufficient application, he can obtain any claim justified thereby." *H. Ward Leonard, Inc. v. Maxwell Motor Sales Co.*, 288 Fed. at 71.

"If the mixing be counted as one step, the amendment merely means that the second step may be done in any one of three ways, either by standing, by heat or by actinic light. . . . The amendment merely describes a characteristic or property of the mixture, that is, that it reacts by standing as well as in the presence of heat or actinic light. . . . An applicant cannot amend for the purpose of including the device or processes of third parties; who may be using the invention during the prosecution of the application without the non-essential elements or the step in question. But he may more clearly point out what he regards as essential and what he regards as non-essential in the process originally disclosed by him." *American Purifyne Co., Inc. v. Novadel Process Corp.*, 3 U. S. P. Q. 184.

"The application for the patent contained, originally, no process claims. The original claims were struck out and two process claims were substituted. . . . An inventor is entitled to secure by a patent his actual invention as fairly indicated, . . . as suggested . . . or disclosed by his original drawings and specifications; . . . while his application is pending he may make such amendments to his claims, without regard to the nature or scope of the claims originally made, as will secure that end." *Heller Bros. Co. v. Crucible Steel Co.*, 297 Fed. at 39, 43.

"He was justified in assuming that a chemist would understand when he said in his original application that he used nitrobenzole or other solvent, that he meant other similar or equivalent solvent, one which would accomplish the same result in the same manner. A chemist



knowing the object to be attained, would hardly have selected a solvent which could not accomplish that object. Knowing the properties of nitrobenzole, he naturally would seek an equivalent having similar properties and not one which would defeat the object in view. Later on, in response to a demand from the Patent Office, Goodwin removed all doubt by actually stating, what we think the law implied, that he used 'nitrobenzole or other non-hydrous and non-hygroscopic solvents such as may be employed in producing celluloid, as distinguished from collodion.' This amendment was within his rights." *Goodwin Film and Camera Co. v. Eastman Kodak Co.*, 213 Fed. at 237.

"The claims and specifications were amended . . . so as to limit the particle size in the carrier to a diameter not exceeding 60 microns. . . . The application before the amendment read: . . . 'We prefer to employ these materials of a degree of fineness such that the individual particles do not exceed twenty microns and . . . although we are not limited to degrees of fineness falling within such limits. . . . The amendment did not add new matter.'" *General Chemical Co. v. Selden Co.*, 14 U. S. P. Q. 53.

"The first patent is attacked on the ground that it contains new matter. The new matter is supposed to be crystallization in motion. . . . Crystallization in motion was well known. . . . It was not necessary in this patent to more than briefly refer to the fact that Newkirk was using the sucrose crystallization with its agitator." *International P. D. Co. v. Penick and F. Ltd.*, 30 U. S. P. Q. 306.

"The application as originally filed did disclose incandescent tungsten electrodes. . . . The Board agreed with the Examiner that the application did not disclose that the incandescent electrodes emitted ultraviolet rays and . . . held that the amendment with respect thereto was new matter. . . . The emission of such rays is inherent in incandescent tungsten electrodes. . . . The Board of Appeals was in error in rejecting the amendment recit-



ing the emission of ultra-violet rays." Ruttenauer, 23 U. S. P. Q. 308.

"The Examiner has criticized claim 56 in calling for a 'non-volatile thinner' as being too broad and indefinite. . . . Appellant argued that thinners have been claimed in the case from the original filing and that diluents and thinners of several types are referred to in the specification. . . . Appellant makes no answer as to the non-volatile feature. . . . This claim is not considered allowable." Bailey, 31 U. S. P. Q. 104.

"The Examiner rejected Semon on the ground that such proposed claims were barred because of estoppel as based upon the interference. The rejection was appealed to this tribunal and it was held that estoppel did not apply since a different species, not disclosed by Clifford, was involved but it was observed that the Examiner had not raised any ground of non-patentability as between the para and the meta form and that such question was not up for decision. The Semon application was then passed to issue including the appealed claims directed to the para form. Under such circumstances we do not see how the patent to Semon may be regarded as a reference against the senior party Clifford. Clifford is entitled to any such matter common to the two or even broader where priority was awarded to him. If non-patentability, as between the meta and the para form was to be urged, it should apparently have been brought forward before the allowance of claims to the para form to Semon." Clifford, 33 U. S. P. Q. 417.

"The only furnace embodying this disclosure was one built in 1918 at Milwaukee. It proved a failure. . . . The unsuccessful Milwaukee furnace was so changed as to operate in the same way as that now employed by the alleged infringers. This operative and functional change in the unsuccessful furnace of the original application doubtless led to a corresponding patent change by way of amendment. . . . The reason for the appearance of the

new matter set out in the amendment to the original application and in the application for the process patent is found in the failure of a furnace built and operated early in 1918. . . . And in the subsequent alteration of that furnace so as to embody the principle of the present claims. . . . When so altered and operated, it was a success. . . . Under the decisions . . . such procedure cannot succeed.” *Lopulco Systems, Inc. v. Bonnot Co.*, 24 Fed. (2) 512.

“Here appellant has specified numerous substances which he declares are not only finish-solvents themselves, but are similar to others in the class which he seeks to cover by the appealed claims. They are sufficient to convey to one skilled in the art the nature of the chemicals which will accomplish the desired result. . . . The case of *Matheson v. Campbell* . . . has not been followed by the later decisions. . . . The expression, ‘a liquid, finish-solvent, ketonic derivative of a cyclic  $\text{CH}_2$  hydrocarbon,’ used in the appealed claims means only such ingredients as are the common equivalents . . . or . . . The claims . . . should be allowed.” *In re Ellis*, 167 O. G. 981.

“The only ketone disclosed in the application is acetone. This seems to have been the only substance appellants had in mind for serving the purpose for which it is used. They confined themselves to this until five years after the filing of their application, during which time the finish-removing art had been extensively developed, when they presented the present claims. There is nothing in their application to warrant the presumption that they had discovered that ketones generally could be used as an ingredient in their composition. . . . The claims were properly rejected.” *In re Dosselman and Neymann*, 167 O. G. 983.

“Titanic iron, obviously from applicant’s affidavit, is not such a compound as titanium carbide or oxide mentioned in the original specification, nor is any instruction or indication given as to how to determine what com-

pounds of titanium, other than the oxid or carbid, may be employed. In this state of facts I do not think that a claim which is broader than the specific suggestion of the original specification can be allowed." *Ex parte Steinmetz*, 224 O. G. 363.

"The original application did not in terms state that the speed of rotation should be varied according to the character or shape of the article; whereas the amendment does set forth that 'an article having projections, such as a water pitcher or the like, would be dislodged from an absolutely central position, due to the irregular action upon the projecting parts; and hence the rotation is adjusted to a comparatively low speed, which will not materially dislodge any article which it is desired to clean from the approximately normal central position during rotation.' This, again, is but an explanation or a specification of a method of achieving the result set forth, although somewhat meagerly, when in the original application reference is made to 'avoiding almost the radical displacement,' and 'effecting only a restrained and slow displacement along the surfaces of the utensils to be polished.' . . . The amendment falls within the scope of permissible amendments." *Schaum and Uhlinger v. Copley-Plaza Operating Co.*, 260 Fed. at 204, 205.

"Dolan's attorney introduced not merely the theory, but the mode of applying it, for the first time, in the amended specification or, in other words, then for the first time pointed to an invention, the essence of which was to have so short a chamber or cylinder as to prevent the mixing of the air taken into it, and to emit the current of gas surrounded by the greater part of such air as an envelop or film. . . . His specification did not give a hint of the means. . . . He made no claim for a process and disclosed no invention of a device. This being so, the amendment required an oath that Dolan might have found it difficult to take, and for want of it the pat-

ent is void." *Steward v. American Lava Co.*, 215 U. S. at 168.

"The patent is for steel furniture springs, protected by japan and tempered by the heat used in baking the japan. . . . The specification which accompanied the original application did not set forth the discovery that moderate heat, such as may be applied in japanning, will impart temper to the springs, but set forth merely the protection of the springs by japan. . . . The plaintiff has no valid patent." *Eagleton Mfg. Co. v. West, Bradley and Cary Mfg. Co.*, 111 U. S. at 497, 498.

"Nothing whatever was added to the specification of the patent in suit from the time of first filing the application in the patent office. . . . The mere fact that there was no claim for the method in the application when it was filed, and that one was added by amendment without a new oath, does not make the patent invalid. . . . Claim 1 of the patent in suit : . . is fairly derivable from the sworn disclosure of the original specification, and therefore no supplemental oath was required to sustain the amendment." *H. J. Wheeler Salvage Co. v. Rinelli and Guardino*, 295 Fed. at 727.

"No claim for a process was in the application for this patent when it was filed. One was afterwards inserted by the attorneys, without any new oath. . . . The changing of claims for inventions described in the specification does not enlarge the scope of the application, and seems to be well within the authority of the attorneys to prosecute it, and according to the constant practice of the patent office." *John R. Williams Co. v. Miller, Du Brul and Peters Mfg. Co.*, 107 Fed. at 292.

"The boards as described in the application are, in fact, capable of expanding and contracting under a force less than that necessary to crack plaster. It is true that Shaw did not state the latter function in his specifications or claims, nevertheless it was inherent in the disclosure

of his application, and he is entitled to make the claim accordingly." *Ellis v. Shaw*, 321 O. G. 223.

"The original disclosure contains no suggestion of such composition, but appellant contends that the outer coating mixes to such an extent with the previously-applied ammonium phosphate when the two are separately applied that the 'mixture' claims on appeal are readable on the coated fabric prepared in the manner originally disclosed. . . . It seems clear that there is no such intermingling of the ammonium phosphate with the ingredients of the outer coating as would justify the claiming of the superposed layers as mixtures." *Ex parte Lindsay*, 341 O. G. 256.

"The Examiner held appellant failed to state anywhere in his original specification that he added sufficient lime to autogenously create the major portion of the heat required, that he supplied some heat from external sources and obtained some from the quicklime added, but nowhere stated he obtained the major portion of the heat from the action of the quicklime. . . . Appellant did not say so in his original specification. He cannot, in consequence, include the specific matter in his claims." *Ex parte Statham*, 339 O. G. 220.

"The only difficulty . . . with the original application is that the salt was then said to be crystallizable. . . . His application was erroneous. . . . Would an amendment have been outside of the applicant's rights? . . . If his result is a new invention, then of course, it could not be introduced by the amendment, but otherwise the amendment is unobjectionable." *Parke-Davis and Co. v. H. K. Mulford Co.*, 189 Fed. at 114.

"In the specification, the applicant, Akimoff, had made no claim for a method patent, and an examination of claims 15 and 16 discloses that they . . . must therefore be held void." *Dynamic Balancing Mach. Co. v. Akimoff*, 279 Fed. at 288.



“There is no direct claim for spot welding in the original application. . . . The article claims . . . were never, prior to 1910, claims in any form in the Harmatta application. . . . These claims must fall.” *Thomson Spot Welder Co. v. Ford Motor Co.*, 268 Fed. at 854.

“Subsequently becoming acquainted with the washing-out process, he sought to incorporate it, and . . . filed a communication by which the application was ‘amended by canceling the entire specification, with the exception of the caption and signatures, and substituting therefor’ a new specification, which sets forth both the processes, but still contains the generic claim and the ‘beta’ specific claim. . . . It was thought better to make a new application, setting forth both the processes under the inventor’s oath. . . . The later and the earlier applications will be treated as continuous.” *Badische Anilin and Soda Fabrick v. A. Klipstein and Co.*, 125 Fed. at 554, 555.

“It is true that in Nobel’s original memorandum, on file in the patent office, he mentions a capsule as a means for effecting the explosion of nitro-glycerine. But he deliberately omitted it from his specification as ultimately framed, and such omission must be held to be either an abandonment of its use to the public, or an irrevocable declaration that as a means of exploding nitroglycerine it was not his invention.” *Atlantic Giant Powder Co. v. Hulings*, 21 Fed. at 522, 523.

## II. Patent Office Practice

“No method as such is disclosed by the application as originally filed, but the method . . . is so bound up in the apparatus . . . as to be in effect the function of that apparatus. The distinction between the method and the apparatus is not sufficient to warrant different ownership, and in this case the method must accompany the real invention, which is the apparatus. The claims for the method are not supported by a supplemental oath;

but that may be supplied prior to issue.” *Dewey v. Colby*, 75 O. G. 1360.

“Where . . . application as filed discloses an apparatus and also a patentable process, and the relation between them is such that they could be joined in one application and the apparatus only is embraced in the statement of invention and claims as originally presented . . . claims for the process may be subsequently incorporated, if seasonably presented and supported by a supplemental oath.” *Ex parte Perkins*, 55 O. G. 139, following *Ex parte Lillie*, 53 O. G. 2041.

“The appellant claims that no mixture claims were included in the application when it was sent to the Patent Office but were added later during the prosecution of the case. . . . There is no distinction between claiming the step of mixing and the mixture produced. . . . A mixture claim or a process and mixing claim may be based upon the same inventive art. It is not necessary for the applicant to state the theory or principle upon which the advantageous result is based. . . . The amendments not allowed by this rule are those involving a departure from the original invention which was not the case here.” *American Purifyne Co., Inc. v. Novadel Process Corp.*, 3 U. S. P. Q. 184, 185.

“The application in this case showed originally an apparatus and a process, and upon requirement applicant limited his claims to the apparatus. . . . Applicant thereafter sought to amend his application by striking out his claims for the apparatus and introducing claims for the process. . . . I am not prepared to say . . . should it be made to clearly appear that the applicant had made an actual mistake in claiming one invention instead of the other, through his own ignorance or the lack of information on the part of his attorney, and should he present an amendment changing the claims from the apparatus to the process, . . . that such amendment and

corrections might not be allowed." *Ex parte Zabel*, 43 O. G. 627.

"An applicant having originally presented only claims for a method and having prosecuted them to a final rejection and taken an appeal . . . has made his election, and he cannot be permitted to thereafter substitute claims covering mechanism alleged to be capable of carrying out the method originally claimed merely because they are believed to be patentable and do not include new matter." *Ex parte Aberli*, 91 O. G. 2371, quoting *ex parte Eschner*, 63 O. G. 760.

"The Examiner was right in requiring a drawing; but he required it not as being necessary to show the invention, but as showing some means for carrying the invention into practice. . . . The drawing furnished must be considered in the same light as additional illustration in a case in which a drawing was originally filed or as additional description." *Ex parte Russell*, 84 O. G. 2021.

"The application of Harmatta as filed disclosed a method, an apparatus, and an article, but contained only claims to the method and apparatus. The Examiner suggested to him, under the provisions of the Rule 96, both method and article claims from the patent to appellant. The amendment of Harmatta inserting his claims was not accomplished by a supplemental oath. . . . There is no such irregularity as will preclude the proper determination of the interference. . . . Harmatta has filed a preliminary statement in which he alleges that he is the inventor of the issue in the interference." *Rietzel v. Harmatta*, 161 O. G. 1043.

"In the application as originally presented the title of the invention, the statement of the invention, and the claims were restricted to a process. . . . Applicants filed an amendment containing claims covering a process and also product resulting from the process. . . . The product claims should be supported by a supplemental oath." *Ex parte Ruckrich and Bode*, 106 O. G. 765.

### III. Estoppels from Amendments

“He put in a claim to the mode of preparing rawhide by the fulling operation and the preserving mixture. That claim . . . he withdrew . . . nor can he, under the present patent, claim as a new article the rawhide thus prepared, for he made that claim . . . and he struck it out. . . . It is well settled, by numerous cases in this court that under such circumstances a patentee cannot successfully contend that his patent shall be construed as if it still contained the claims which were so rejected and withdrawn. . . . The principle thus laid down is, that where a patentee, on the rejection of his application, inserts in his specification, in consequence, limitations and restrictions for the purpose of obtaining his patent, he cannot, after he has obtained it, claim that it shall be construed as it would have been construed if such limitations and restrictions were not contained in it.” *Royer v. Coupe*, 146 U. S. at 532.

“The applicant having limited his claim by amendment and having accepted a patent with such claim, brings himself within the rules: that, if a claim to a combination is restricted to specified elements, or a claim to a process is restricted to specified steps or a series of acts, all must be regarded as material; that limitation imposed by the applicant, especially those added by amendment after a claim has been rejected, must be construed against the inventor and regarded as disclaimers; and that the patentee is thereafter estopped to claim the benefit of the rejected claim or such a construction of his amended claim as would be equivalent thereto. The principles above stated have been applied more frequently to patents for combinations . . . but they apply equally to process patents.” *Jensen-Salsbery Laboratories, Inc. v. O. M. Franklin B. S. Co.*, 22 U. S. P. Q. 140.

“Moffatt then amended his claims. . . . That it was Moffatt’s purpose to limit the maximum degree of heat

. . . admits of no doubt. . . . It was Moffatt's right to limit by his claim the maximum degree of temperature to which the moist starch would be subjected in the practice of his process; and, having done so to meet the requirements of the Patent Office, he cannot now be permitted to say that such a degree of temperature is not an essential element of his process." *Corn Products Refining Co. v. Douglas and Co.*, 207 Fed. at 577, 578.

"The patent was not issued until . . . after the 'preferred ratio of lay' had been inserted in the specification on the suggestion of the 'primary examiner.' . . . In order to avoid the disclosures of the prior art and secure a patent, Whyte accepted this limitation of a definite ratio and now is bound by it." *Macomber and Whyte Rope Co. v. American Steel and Wire Co.*, 276 Fed. at 287. Compare *Dillehay*, 25 U. S. P. Q. 263, also *Cherry*, 25 U. S. P. Q. 48; and *Brownell*, 33 U. S. P. Q. 242.

"His article of manufacture having been adjudged old . . . and rejected by the patent office, and he having acquiesced in such rejection, he, and those deriving title from or under him cannot now have the claims of the patent finally issued so construed as to include what was thus rejected." *Francy v. Empire Fire Clay Co.*, 47 Fed. at 314.

"The principal question is whether the accepted claims entitle the complainant to cover a sound record having undulating grooves of uniform depth, manufactured of shellac and baryta, or whether the patentee strictly limited himself to the use of hard rubber in the manufacture of his patented article. The law is well settled that the claims finally allowed and accepted by the patentee must be read in connection with the claims set forth in the original application. . . . 'It is immaterial . . . whether the patent office was right or wrong. . . . By amending his specification and claims the complainant admitted in effect that some limitation was necessary.' " *Victor*



Talking Mach. Co. v. American Graphophone Co., 145 Fed. at 191, 192.

“Thereupon the applicant filed certain amendments to his specification, by striking out everything that related to the method or process for stemming leaf tobacco. . . . He is not at liberty now to insist upon a construction of his patent which will include what he was expressly required to abandon and disavow as a condition of the grant.” *Sutter v. Robinson*, 119 U. S. at 540, 541.

“The first application made by Singer broadly covered the process of adding an oily substance to a stock of dry, macerated, or comminuted and highly absorbent material, their thorough physical mixture, and the removal of the surface oil from the particles. . . . He had been denied a broad claim for a dust-collecting material; also for the use broadly of oils. . . . In the end he got his patent, but only by adapting as an element an oil or oily substance of a relatively nonvolatile character.” *Cotto-Waxo Chemical Co. v. Perolin Co. of America*, 185 Fed. at 269, 270, 271.

“It is said that the applicant in his original application having broadly claimed crystalline calcium carbide and having acquiesced in the rejection of the claim cannot now contend that ‘crystalline calcium carbide existing as masses of aggregated crystals’ means nothing more than crystalline carbide. . . . The claim is undoubtedly limited to the form of crystalline carbide which exists as masses of aggregated crystals. . . . The patent covers crystalline carbide when the crystals are aggregated in masses, whether such crystals be perfect or imperfect.” *Union Carbide Co. v. American Carbide Co.*, 181 Fed. at 109, 110.

“There having been no discussion in the Office regarding the nature of the mineral surfacing, but only with regard to the nature or extent of its application to the asphaltic surface, and no rejection having been based on the nature of the mineral substance applied, the estoppel

as urged on behalf of defendant did not arise. It follows therefore, that the claim in suit is entitled to such range of equivalents as is appropriate in a pioneer patent." *Bird v. Sears, Roebuck and Co.*, 299 Fed. at 576.

"The subject of tuning was apparently an after-thought. . . . Not a word was contained in the original application on that subject. It is true that in the original application is shown and claimed a condenser in circuit; but its function is not described nor claimed, nor is it shown to be adjustable, and that part of the specification and claims which relates to the subject of tuning is . . . clearly new matter. . . . The enlargement of the original application by the amendments which introduce the new subject of tuning was not justified." *United Wireless T. Co. v. National Electric S. Co.*, 198 Fed. at 395, 398.

## CHAPTER 17

### AMENDING THE PATENT AFTER IT ISSUES

The Patent Statute provides two methods for amending a patent after it issues. Section 4917 says, "Whenever through inadvertence, accident, or mistake, and without any fraudulent or deceptive intention, a patentee has claimed more than that of which he was the original or first inventor or discoverer, . . . such patentee . . . may . . . make disclaimer of such parts of the thing patented as he shall not choose to claim or hold." It is necessary to learn how that provision has been applied by the Courts to understand its effect.

Section 4916 relates to a wholly distinct remedy, viz., reissue, and uses other words in stating to what situation the remedy is applicable. This section reads: "Whenever any patent is inoperative or invalid by reason of a defective or insufficient specification, or by reason of the patentee claiming as his own invention or discovery more than he had a right to claim as new, if the error has arisen by inadvertence, accident, or mistake, and without any fraudulent or deceptive intention, the Commissioner shall . . . cause a new patent for the same invention . . . to be issued . . . for the unexpired part of the term of the original patent . . . but no new matter shall be introduced into the specification."

Many problems come before the Courts in applying these two Sections. The difference in the wording of the Sections, the meaning of the word 'new' in Section 4916, the view that rights are lost by delay to reissue, the accepted doctrine that a patent cannot be reissued to dominate persons who have acquired "intervening rights," and many other factors have contributed to the

building up of much necessary court-made law relating to reissues.

### WHAT THE COURTS HAVE SAID

#### I. By Disclaimer

"The disclaimers are attacked on the ground that they exceed the legal function of a disclaimer and are an attempt to change a mechanical patent to a process or method patent—something which could only be properly accomplished by a reissue." *John E. Thropp's Sons' Co. v. Seiberling*, 264 U. S. at 330.

"Since bringing suit, the plaintiff has filed a disclaimer under the statute, in which he limits his claim to the gold-ruby compound. This the plaintiff had a right to do. . . . This was a patent where a part could be properly disclaimed. It did not require the importation of anything new into the specification, but simply the elimination of a part of what was originally claimed." *Libbey v. Mt. Washington Glass Co.*, 26 Fed. at 759.

"The plaintiff . . . filed in the patent office a disclaimer . . . to that part of the claim of the patent 'which claims, as an improvement in flexible tubing for illuminating gas, the use and application of glue, thereby limiting the claim to the use and application of glue composition in the tubing substantially as described, for the purpose of making the flexible tubing tight, whether of cloth, rubber, or other gum.'" *Taylor v. Archer*, 4 Fish. 449.

If the specifications themselves separate the part disclaimed from that retained, that part is exsented without affecting the residue which must be of itself enough to support the claims. True, the patentee has been wrong in asserting that the whole disclosure was new, but he has been right as to a part which does not depend upon what he disclaims. But when the specifications do not so sepa-

rate the parts, the disclaimer can succeed only by interpolating a limitation into the part which must remain, if the claims are to survive. Nothing is taken out of the specifications, though something is taken out from their meaning. What is changed was originally false and has now by the added limitation been made true. This however is to reframe the language, not to drop out a part. It is not the office of a disclaimer to do this, but of a reissue." *Grasselli Chem. Co. v. National Aniline & Chem. Co.*, 26 Fed. (2) 310.

"Plaintiffs maintain, and we think correctly, that in patents relating to the metallurgy of iron and steel, where composition limits are defined as well as where qualitative properties are characteristics, there is necessarily present, at about the limit points, what may be termed a twilight zone, that is to say, that a mathematical line cannot be drawn which will, for all purposes, accurately define either the upper or lower composition limit. They claim this is particularly true with respect to carbon content, where relatively small differences may greatly affect the properties of the product, and where the personal equation of the analyst necessarily enters. Dr. Brophy, analyst of the Research Department of the General Electric Company, testified that the limit of correct carbon analysis should be two one-hundredths of one per cent either way. Plaintiffs further point out that the use of the adjective 'about' in the narrowing of its claim is the adoption of the very term used in the Clement patent, where it is stated, line 31, page 1, 'Essentially my improved alloy consists of iron and chromium, the chromium content being equal to at least ten per cent of the whole and the carbon content being not greater than two-tenths of one per cent of the whole and preferably, not over about one-tenth of one per cent.' Thus the patent specification described a preferred content, but permitted an alternate content, and it is this latter, which the disclaimer renounced, and limited the patent to the preferred content.



Where such alternatives exist the patentee may disclaim one, and retain the other, provided the claim as so modified is supported by adequate disclosure in the specifications, and does not result in the substitution of a new claim." *American Stainless Steel Co. v. Rustless Iron Corp. of America*, 17 U. S. P. Q. 21.

"The disclaimer covers 'any acidulated electrolyte which is not acidulated with an inorganic acid such as boric or phosphoric acid.' Therefore any acidulated electrolyte not acidulated with an inorganic acid is a limitation upon the electrolyte as described in the patent. The pertinent specification is: 'The nature and amount of the acid or acids used to acidulate the new or fresh electrolyte may vary widely. In general, the acid should be one a salt of which can be used as a film producing agent, as for example boric or phosphoric acid. Thus boric acid may be used in a phosphate electrolyte, and phosphoric acid in a borax electrolyte. The quantity of the free acid used may be large or small, but in my extended tests and practical experiments I have secured the best results (that is, the best results obtainable with a fresh electrolyte) with an electrolyte of the following proportions: distilled water, one gallon; boric acid, one and a half pounds; borax, one-quarter pound.' The acid above referred to is restricted by the disclaimer to an inorganic acid such as boric or phosphoric acid. . . . So far from expanding the claim of the patent, it is thought that the disclaimer here involved very obviously limits something which was specifically claimed, *i.e.*, a free acid, to 'an inorganic acid such as, etc.' " *Mershon v. O'Neill*, 14 U. S. P. Q. 206; 3 F. Supp. 38.

"Appellant further disclaimed . . . 'any process of making glue excepting where the starch or starchy product or carbohydrate subjected to the process is degenerated,' by the use of the first process, 'to the extent described in the said patent.' In our judgment this disclaimer is a conclusive bar to appellant's attempt to mo-

nopolize a product, which does not depend at all for its existence upon the use of appellant's valid process claims." *Perkins Glue Co. v. Gould Mfg. Co.*, 292 Fed. at 597.

"Appellee's eventual objection being the production of alkyl sulphates (to be 'afterwards hydrolized to produce alcohols'), they introduce 'cold concentrated sulphuric acid,' which . . . 'reacts with olefines to form acid alkyl sulphates.' Apparently the resultant refined gasoline product (which is not a primary objective of appellees) is one which is largely denuded of the unsaturated hydrocarbons, or olefines. To the product which appellants sought to obtain, however, these unsaturated hydrocarbons or olefines are highly essential and it is desired to retain them. The assignee of appellants . . . entered the disclaimer . . . and it is insisted that, construing the disclaimer as part of appellant's claims . . . they avoid appellee's disclosure. . . . The disclaimer . . . is functional and only functional." *Davis v. Isham*, 21 U. S. P. Q. 632, 633.

"Matters which have been properly disclaimed cease to be a part of the invention. . . . 'It follows that the construction of the patent must be the same as it would be if such matters had never been included in the description of the invention or the claims of the specification.' . . . The literal effect of the disclaimer is to confine the claim to a method in which no other coagulants are employed except 'such as salts of iron.' . . . The part disclaimed is not part of the descriptive matter, but a recital intended to enlarge the scope of the claim. . . . The patent, after the disclaimer, is to be read exactly as though the recital had never been inserted. Thus read, it is clear that the claim covers the use of any coagulant having similar properties to the salts of iron. . . . Infringement is established . . . although they use alum." *Schwarzwalder v. New York Filter Co.*, 66 Fed. at 158.

“By the plaintiff’s own confession, contained in the quotation already given from the disclaimer, explosion by means of a capsule was not described in the original patent. . . . The purpose of the reissue here was to enlarge the scope of the original specification and claim. The whole . . . paragraph, respecting a capsule or percussion cap, was new both in letter and substance. But that paragraph has been solemnly disclaimed. . . . A construction which would thus render the disclaimer altogether nugatory must be essentially wrong and cannot be accepted.” *Atlantic Giant Powder Co. v. Hulings*, 21 Fed. at 522.

“What he disclaimed was inserted by the reissue. It did not exist in the original patent. . . . It was proper to correct by a disclaimer the unlawful claim introduced by the reissue. . . . In connection with a disclaimer of a claim or part of a claim, it is not improper to eliminate or withdraw . . . the parts of the body of the specification on which the disclaimed claim or part of a claim is founded. . . . The disclaimer . . . is . . . to be . . . considered as part of the original specification. . . . The disclaimed parts . . . were introduced by reason of a mistaken idea on the part of the plaintiff, that the concrete, in setting, would shrink.” *Schillinger v. Gunther*, 16 O. G. 905.

“The patentee, in the disclaimer, expressly disclaimed ‘the forming of blocks from plastic material without interposing anything between their joints while in the process of formation.’ . . . What the defendant did was just what patentee disclaimed. . . . The defendant . . . has not infringed.” *California Artificial Stone P. Co. v. Schalicke*, 119 U. S. at 407.

“The court is not now at liberty to usurp the functions of the Patent Office, and by forced construction, with the aid of the proposed disclaimer, issue in effect a new patent, limiting the claimed invention to a particular kind of sleeve, notwithstanding the essential element of the

claimed invention consisted wholly in protecting the threads of the conduit by any 'fragile' sleeve suitable for the purpose." *Enameled Metals Co. v. Western Conduit Co.*, 269 Fed. at 629, 630.

"In the case under consideration the disclaimer was not of a claim but of certain statements in the specification which if retained might be construed to have the effect of illegally broadening the second claim. . . . We think there is no force in the criticism that a disclaimer may not extend to a part of the specification, as well as to a distinct claim. . . . Had the purpose of the disclaimer been to reform or alter the description of the invention, or convert the claim from one thing into something else, it might have been objectionable, as patents can only be amended for mistakes of this kind by a reissue. But the disclaimer in this case appears to have been made to obviate an ambiguity in the specification, and with no idea of obtaining the benefit of a reissue. If the clauses had the effect of broadening the patent the disclaimer removes the objection. If they did not, the disclaimer could do no harm, and cannot be made the subject of criticism." *Carnegie Steel Co. v. Cambria Iron Co.*, 185 U. S. at 435, 436.

"The question arises whether a patentee who has claimed a process for the production of white and colored patterns on aniline-black grounds can disclaim the process as to white patterns and pigment colored patterns and retain it as to coal-tar colors and dyewood extracts. . . . Where a claim is clearly void the court cannot make it valid either by importing into it elements not mentioned therein or by construing the language of the claim to cover elements not clearly described in the specification. After claiming a process so broadly that it is met by the prior art and after the process practiced by following a certain formula has gone into general use, the patentee cannot so limit his claim as to cover that formula unless it be clearly described in the specification and the claim

be susceptible of an interpretation including it." *Bracewell v. Passaic Print Wks.*, 107 Fed. at 478, 479.

## II. By Reissue

"The remedy of reissue is open to him if he in fact, in good faith, though mistakenly, claimed more than he really discovered, or if he intended to set forth the real discovery in the language equivocal, self-repugnant, or otherwise open to the charge that he could not, or did not, discover a thing as broad as the language susceptibly warrants." *Kraft Cheese Co. v. Pabst Corp.*, 17 Fed. (2) 791.

"The change made in the old specification, by eliminating the necessity of using the fat liquor in a heated condition, and making in the new specification its use in that condition a mere matter of convenience and the insertion of an independent claim for the use of fat liquor in the treatment of leather generally, operated to enlarge the character and scope of the invention. The evident object of the patentee . . . was not to correct any defects in specification or claim, but to change both, and thus obtain, in fact, a patent for a different invention. This result the law . . . does not permit." *Russell v. Dodge*, 93 U. S. at 464.

"Having disclosed the process, the failure to claim was . . . the result of inadvertence, accident or mistake. . . . The process and the apparatus are connected in their design and operation. . . . Whatever of doubt there may be . . . should . . . be resolved in favor of the inventor. . . . There was error in refusing the reissue application." *In re Heroult*, 127 O. G. 3217, distinguishing *James v. Campbell*, 104 U. S. 356, *Heald v. Rice*, 104 U. S. 737, *Giant Powder Co. v. California Powder Wks.*, 98 U. S. 126.

"This application is for a reissue and the Examiner has held that the method claims which have been inserted



in the reissue application are for a different invention . . . the claims of the original case being limited to the apparatus. . . . Has also held that the method claims . . . are expressions only of the operation of appellant's specific apparatus. . . . We cannot agree . . . other means . . . might be employed. . . . The method claims cover substantially the same invention as that called for by the apparatus claims but in somewhat broader terms. . . . We do not consider that there is a proper line of division." *Dyrssen*, 4 U. S. P. Q. 339.

"The first-stage product was not covered by any of the claims of the original patent. . . . The new claims of the reissue are merely sub-combination claims. . . . The reissue was not a departure and was not invalid." *Kansas City S. Ry. Co. v. Silica Products Co.*, 8 U. S. P. Q. 479.

"The original patent was for a process, to wit: a mode or different modes, of exploding nitro-glycerine; whereas, the re-issues are for manufactured compounds or mixtures, namely: mixtures of nitro-glycerine with gunpowder, gun-cotton and rocket powder. . . . Now, inasmuch as the reissued patents . . . are for compounds . . . it is impossible not to say that they are for an entirely different invention from that secured or attempted to be secured by the original patent. If the patent had been not for the mode or process of exploding nitro-glycerine, but for the process of compounding nitro-glycerine with gunpowder and other substances, inadvertently omitting to claim the exclusive use of the substance so produced, the case would have been one of very different consideration." *Giant Powder Co. v. California Powder Wks.*, 98 U. S. at 133, 136.

"The patent is plainly limited by its language to . . . the particular parts of the very machine described. . . . On the other hand the claim of the reissued patent is broad enough to cover the process of sawing paper boards in a wet state by means of hand saw. . . . This surely is

not the same invention as that described in the original patent." *Eachus v. Broomall*, 115 U. S. at 438, 439.

"The expressions in the specification of the original patent chiefly relied on . . . to show the conception of the invention covered by the reissue are: . . . 'fine insulated wire' . . . but a winding with fine wire . . . does not necessarily imply lightness. . . . He . . . described it not as of light material, but 'of insulating material—such as shellacked paper.' . . . The claims in suit of the reissue cannot be sustained, because the description in the original patent fails to show that the invention covered by said claims was intended to be secured in the original patent." *Weston Electrical Instrument Co. v. Stevens*, 134 Fed. at 579, 580.

"The original patent was . . . for an improved paint compound. . . . There was no allusion in the patent to anything to contain the paint. . . . But the reissue is not limited to that particular kind of paint . . . is of all kinds of liquid mixed paint stacked in tight vessels. . . . This reissue cannot stand." *Averill Chemical Paint Co. v. National Mixed Paint Co.*, 9 Fed. at 463, 464.

"The attempt in the reissue is to claim the oil product, no matter by what process produced; to sweep into complainant's net every new method of producing the desired result. . . . The claim of the reissue has been unlawfully broadened." *Vacuum Oil Co. v. Buffalo Lubricating Oil Co.*, 20 Fed. at 850, 851.

"It is insisted that the claim is limited to the invention of an additional feature. . . . It does not, however, aid the complainant, to show that it has been narrowed at one end when it is quite apparent that it has been doubly expanded at the other. . . . The claim is no longer limited to the process of cleaning and drying seed, or to the feeding of seed over the inclined surface of a conical steam-coil." *Gage v. Kellogg*, 26 Fed. at 242, 243.

"It is the third reissue of a patent whose claim is for the use or employment of glue, glycerine, castor-oil, or

any fixed oil, ammonia, borax and sugar when combined to form a composition for the manufacture of printer's inking rollers. Now, if the composition claimed in the reissue is to be treated with reference exclusively to its constituent parts, it is not identical with the composition for which the original patent was granted. A compound of glue, glycerine, and sugar is not physically the same as a compound consisting of these ingredients with a fixed oil, ammonia and borax added to them. They can only be regarded as the same in another sense, as possessing like special and distinguishing properties and like adaptability to the uses for which they are designed. . . . They may, perhaps, be considered as identical within the meaning of the patent law." *Francis and Loutrel v. Mellor and Rittenhouse*, 1 O. G. 48.

"The seventh claim . . . is clearly limited to the product of the invention thereinbefore set forth. . . . Being a claim added on reissue, it should be valid only in case it was for a product of the process previously patented. . . . I think them both valid." *Asbestos Shingle, S. and S. Co. v. H. W. Johns-Manville Co.*, 184 Fed. at 623, 631.

"After the complainant had secured his patent for the process, which was all he could claim under the original specification, he ascertained that he was still not protected against the use by the defendant of barrels, casks, etc., coated or lined by the process covered by his patent; and it was then that he conceived the idea of a reissue which should be broad enough to include . . . also a claim for a barrel, cask, etc., coated or sized with glue, by the process described. This was in effect an expansion . . . and, therefore, rendered the second claim of the reissue invalid." *Leggett v. Standard Oil Co.*, 149 U. S. at 292.

"The original claim was for a mechanism. . . . In his reissue, by claiming as his invention the process of bringing the different parts of the plate successively into the field of the lens, he seeks to put himself in as good a

position as if he had been the first to discover the law referred to, and the first to invent the method of taking advantage of the law by tilting his camera into different positions. . . . This he could not rightfully do." *Wing v. Anthony*, 106 U. S. at 145, 146, 147.

"It appears, then, from the mere reading of the two specifications, that the invention described in the first is for the return-flue boiler; while that described in the second . . . is for a particular mode of using it, with straw as a fuel. . . . A patent . . . issued for one, cannot lawfully be surrendered as the basis for a reissue for the other." *Heald v. Rice*, 104 U. S. at 753.

"The Court was unable to find a decision . . . sustaining a reissue . . . like those. . . . The patent is not for a machine, but for a new composition of matter, produced by a formula consisting of seven progressive steps. . . . In describing step No. 7 . . . they are . . . sawed. . . . He nowhere intimates that his composition can be produced by less than all. . . . How can it be said that the action of the saw . . . performs no function." *International Terra Cotta Lumber Co. v. Maurer*, 44 Fed. at 622, 623.

"The vice of that patent was . . . it did not . . . 'disclose a patentable invention within the meaning of the law'; and . . . such machine process was not new because it was the same process that was known and used in the hand art. . . . And adjudged lack of patentability is not made by the statute a ground for reissue." *Penn Electrical and Mfg. Co. v. Conroy*, 185 Fed. at 514.

"We find no satisfactory evidence that the idea of a single stage process was ever conceived by Watt and Burgess until after a patent disclosing it was granted to . . . The reissue is attempted to be sustained only on the ground that it is for a single stage process . . . void." *American Wood Paper Co. v. Fiber Disintegrating Co.* (Wood Paper Patent), 23 Wall. at 599.

“Comparison at once discloses that the only difference between original claim 2 and reissue claim 3 is the elimination in claim 3 of the limitation to a minimum surface temperature of 270° F. The requirement that the milk treated shall be unboiled when first exposed on the drying surface does not change the meaning of the claim, because ‘natural liquid milk’ is necessarily unboiled.” *Hatmaker v. Dry Milk Co.*, 29 Fed. (2) 921.

“The original Blackmore patent was not itself invalid from defective description or insufficient description, or from defective or insufficient claims. There was therefore no right at all to a reissue.” *General Chemical Co. v. Blackmore*, 156 Fed. at 971.

“Hall sought by a reissue to eliminate such disclaimer and correspondingly broaden the monopoly of his patent. . . . The presence of this disclaimer having been made for the purpose of avoiding references, and such disclaimer having been acted upon by the public, a reissue whereby the effect of this disclaimer was avoided and his patent broadened was void.” *Casein Co. v. A. M. Collins Mfg. Co.*, 174 Fed. at 344.

“There appears to be such a radical difference between the matter described and claimed and that contained in the disclaimer that I fail to comprehend why the latter should have been required. . . . ‘Embedded’ is opposed in meaning to the idea of an intimate and thorough mixture of substances. . . . No new matter is attempted to be covered by this reissue application.” *Ex parte Hermann and Taylor*, 10 O. G. 865.

“In some cases, at least, a patent for a process may be reissued to include also claims for an article made by the process . . . his election indicated by canceling the product claims having once been made must be adhered to. . . . To allow an applicant three years later to retrieve in a reissue that canceled claim is unreasonable and unjust to the public.” *In re Hernandez, Administratrix*, 329 O. G. 255.



“When the original claims were rejected, the plaintiff, with full knowledge of the circumstances, expressly disavowed any claims in which the surface temperature should be lower than 270° F. . . . The critical thing is that he chose at that time not to contest the question. The statute does, indeed, allow reissues broadly when ‘the error has arisen from inadvertence, accident, or mistake,’ but this has not been extended to claims abandoned or disclaimed in the progress of the original application through the office.” *Hatmaker v. Dry Milk Co.*, 34 Fed. (2) 610.

“The reissue statute . . . provides: ‘Nor in the case of a machine patent shall the model or the drawings be amended, except each by the other, ‘At bar there were no drawings in the patent and the above provision of the statute does not apply.’” *American Purifyne Co., Inc. v. Novadel Process Corp.*, 3 U. S. P. Q. 184.

## CHAPTER 18

### OF DOUBLE PATENTING AND THE JOINDER OF INVENTIONS

Since the Patent Statute provides only for patents which are for new inventions and which run for seventeen years from their date of issue, the Courts have been faced from time to time with the necessity of determining whether a second patent to a given inventor is in reality a patent for a new invention, or whether it is in effect a second patent for an invention previously patented.

Obviously a second patent for a given invention is nullity before the law, and, if issued, "double patenting" is said to have arisen.

The Patent Office Examiner often demands that an inventor divide his patent application, alleging that it contains and claims separable inventions. Before acceding to the demand of the Examiner the applicant should study what the Courts have said regarding the identity of inventions in connection with the question of double patenting.

#### WHAT THE COURTS HAVE SAID

"There are three distinct types of double patenting . . ." *Fehr v. Activated Sludge, Inc.*, 84 Fed. (2) 953.

"'No patent can issue for an invention actually covered by a former patent . . . though the terms of the claims may differ.' . . . In the *Palmer Pneumatic Tire Co. Case* . . . we said . . . 'the rule rests upon the broad and obvious ground that, if the second patent is for an invention that was necessary to the use of the invention first patented, it cannot be sustained.' But we were there considering a class of cases where the subject-matter of

the later patent was an essential and necessary part of the former invention, and covered by the patent granted therefor; and the observation quoted has no application to that other class of cases where the subject-matter of the later patent (that is, the invention covered by it) was not a component part of the former invention, but it was an independent invention, not necessary to the composition of the first, or included in it." *Dayton Fan and Motor Co. v. Westinghouse E. and Mfg. Co.*, 118 Fed. at 574, 575, quoting *Palmer Pneumatic Tire Co. v. Lozier*, 90 Fed. at 744.

"In considering the question of double patenting, it is necessary to determine whether the claims of the two cases have a possible line of division between them which constitutes invention and patentable difference. . . . We believe the case falls under the second clause of the *Mullen and Mullen*, 1890 C. D. 9, doctrine, wherein division is at least optional if not strictly necessary . . . and that double patenting does not apply." *Bailey*, 31 U. S. P. Q. 190.

"The inventor of a new and useful product or article of manufacture may have a patent which covers it and gives a monopoly upon it regardless of great variations in the method of making . . . in the ordinary and typical case, the method and the product are separable inventions, supporting separate patents, one of which may be valid and the other not." *Dunn Wire-Cut L. B. Co. v. Toronto Fire C. Co.*, 259 Fed. at 261.

"Where an earlier and a later patent issue to the same patentee for the same invention, the later one is void because it would prolong the monopoly. . . . Neither of the cases . . . holds that an apparatus patent issued later than a process patent is invalid, or that it expires with the expiration date of the process patent. . . . The mere process does not disclose the many methods by which it has been or may be practiced, nor does the apparatus in question extend the monopoly of the process beyond the

scope of the patent." *Fehr v. Activated Sludge, Inc.*, 84 Fed. (2) 956, 957.

"A patent containing generic claims and claims to a species is not a bar to the grant of claims to another species in a copending application even if the second species is disclosed in the patent, if there is a patentable distinction between the species. We do not believe that the treatment of solution and chemical compounds with ultra violet light to kill bacteria would suggest this treatment for increasing the vitamin content of foods and therefore we consider the appellants have disclosed two separate inventions." *Sperti*, 23 U. S. P. Q. 294.

"Claims in the Barrett patent are perhaps generic to the method herein presented but the claims on appeal not only differ in structural elements but in the manner in which these elements are operated. We note particularly the timing. . . ." *Barrett*, 26 U. S. P. Q. 151.

"While a requirement for division is not a holding that the claims divided out will be patentable if presented in a divisional case, yet . . . in neither of the first two actions . . . was any suggestion made that the process claims are unpatentable because apparatus claims had been allowed in the other application is somewhat persuasive that the Examiner deemed the method claims for a different invention." *Uhle*, 21 U. S. P. Q. 591.

"The salutary rule against double patenting is directed against the evil of prolonging by subsequent patent the monopoly of an earlier grant. But where, as here, the later patent was separately applied for pursuant to an order for division made by the Patent Office upon an earlier application, which included both product and process, the conclusion of double patenting will not so readily follow." *Fulton Co. v. Janesville Laboratories, Inc.*, 21 Fed. (2) 432.

"Appellant employs a hypochlorite solution and in order to increase its alkalinity adds sodium carbonate thereto. This entire method was disclosed in the patent

to Brogden et al which was copending with this application. The claims in that patent are all limited to . . . borax. . . . Appellant is the inventor of the generic invention common to this application and to the patent; and that appellant jointly with the patentee invented the improvement upon the method disclosed in this application and claimed in the patent. . . . Appellant should not be deprived of the generic protection on his process." Brogden, 3 U. S. P. Q. 130.

"The applicant, if he desires the benefit of product and process claims in the same patent, must so claim his product that it is apparent, that it is the production of the process also claimed." Wellman, 9 U. S. P. Q. 171.

"After a patent is granted for an article described as made by causing it to pass through a certain method of operation to produce it, as, in this case, cutting away the metal in a certain manner, and then bending what is left in a certain manner, the inventor cannot afterwards, on an independent application, secure a patent for the method or process of cutting away the metal and then bending it so as to produce the identical article covered by the previous patent, which article was described in that patent as produced by the method or process sought to be covered by taking out the second patent." Mosler Safe and Lock Co. v. Mosler, Bahmann and Co., 127 U. S. at 361, 362.

"The only difference in the two patents is that No. 348,073 is for spreading on paper the composition described in No. 348,072. . . . As No. 348,073 does not claim the composition of matter, although it describes it, that composition must be regarded as disclaimed, and as being public property, and there was no invention in applying it to paper, as claimed in the patent sued on." Underwood v. Gerber, 149 U. S. at 227, 231.

"Kaufmann first attempted to secure a process and a product patent through one application . . . made a separate application for the patent on the process. . . .



Objection to the validity of the process patent . . . that . . . the process patent would unlawfully extend appellee's product monopoly, fails, because in fact the product patent can be made in other ways." *Aurora Mantle and Lamp Co. v. Kaufmann*, 243 Fed. at 915.

"A dish made by the process of the latter would, of course infringe the former and a dish which would infringe the former . . . could . . . only be made by the process. . . . After the dish and the machine patents there was no room for the process patent." *Oval Wood Dish Co. v. Sand Creek N. Y. W. Mfg. Co.*, 60 Fed. at 290.

"Appellant's method invention lies in the steps described. These steps . . . are the same whether applied in the tempering of only the tread surfaces of car wheels or in the tempering of the entire surfaces of metallic or steel castings. The one inventive idea was disclosed in the patent. . . . The claims . . . to grant them would result in double patenting." *Laughlin*, 9 U. S. P. Q. 130, 131.

"The defendant says that the patentee should have resisted the requirement of the Patent Office as invalid on the ground that the method and the product involved but a single invention. However, and even though the applicant may appeal from a ruling of the Patent Office, he cannot 'justly be blamed for acquiescing in a command by lawful authority, much less can he be made to suffer loss by obedience.'" *National Tube Co. v. Steel & Tubes, Inc.*, 33 U. S. P. Q. 407.

"The application relates to a non-corrosive alloy and method of making and using the same. Claims 10 and 11 relate to a method of applying a non-corrosive and acid-proof protecting coating to metal, two of the elements of which are the specific elements named in said claims 13 and 14. Claim 12, above quoted, specifically includes all of the elements of claims 13 and 14. Claims 13 and 14, as will be observed, relate to two specific alloys per se

of the combinations mentioned in these claims. . . . In the case at bar, claim 12 is for a combination containing specifically all of the elements of claims 13 and 14. Claims 13 and 14 are for a combination of elements resulting in alloys. They are essentially sub-combinations of the combination set out in claim 12." Hawkins, 13 U. S. P. Q. 36, 37.

"The reference, which is appellant's own patent, which was copending, claimed a pre-formed expansion joint comprising a strip of bituminous material having straw incorporated therewith. All the claims of the reference are limited to straw while the claims on appeal are generic in this respect, calling for a relatively long fibrous material incorporated therewith. While apparently these claims could have been made in the patent, as suggested by the examiner, ordinarily an applicant is entitled—where he has two cases with different specific disclosures in each—to put his broad claims in either case. The relatively long fibrous material disclosed in this application may be cocoanut fibre, sisal or long grasses. . . . It is our view that the appellant's claims should be allowed." Ex parte Fischer, 11 U. S. P. Q. 173.

"Concerning the rejection of claims 73 and 77 as not allowable over claims 5, 6 and 7 of applicant's reissue No. 18,603, we find the situation to be that in applicant's original case Serial No. 216,780, which became patent No. 1,823,531 and was subsequently reissued as the above noted reissue No. 18,603, division was required between two species of compounds of this type, namely, that in which the amine was an aliphatic or specifically ethylene diamine, on one hand, and that in which the amine was of the aromatic type. . . . Since applicant has had claims to the present species pending continuously since the original requirement of division, the reissue patent containing only the broad claims and claims to the other species, under the practice, is not a bar to the allowance of the second species in this application. The rejection

based upon this ground is reversed." *Ex parte Clifford*, 33 U. S. P. Q. 416.

"The Painter method patent does not show the practical and convenient machine for making crown corks on a large scale, such as is illustrated by the drawings of the machine patent, and which is described by its claims. The machine patent is therefore valid . . . nor did the existence of the application in the Patent Office prevent application for a machine or combination patent before disclosure by the allowance of the patent." *Crown Cork and Seal Co. v. Brooklyn Bottle Stopper Co.*, 201 Fed. at 350.

"The defendants also contend that the patented glove is simply the product or result of the operation of the patented machine, and so is not of itself patentable. This might be so if it was the only thing that could be made on the machine; but the machine is adapted to knitting of various fabrics." *Lamb Knit Goods Co. v. Lamb Glove and Mitten Co.*, 120 Fed. at 272.

"The patent for the needles . . . must be held void. The real invention of Hopson and Brooks was a machine for swaging metal, and any novelty which exists in the articles made by that machine is the result of functions of the machine. It is explicitly stated in the specification of the patent that the 'needles made by our machine or method possess properties not heretofore found in sewing-machine needles.' . . . There was no invention in applying the means provided by the machine to the making of the needles or other articles for which the machine was adapted." *Excelsior Needle Co. v. Union Needle Co.*, 32 Fed. at 223.

"The electric world . . . it does not matter to them by what process such an insulator is made. . . . This product, as a new and useful article of manufacture, the inventor is entitled to patent and protect. . . . The process he employs and has patented seems peculiarly fitted to accomplish the end desired, but the fact that there may

be others does not debar him from laying claim to the result attained." *R. Thomas and Sons Co. v. Electric Porcelain and Mfg. Co.*, 111 Fed. at 931.

"The other three claims attempt to define the invention by the double vulcanization . . . but this is the process for which applicant has already been granted a patent, and it is not believed that a claim for an article should be granted which only differentiates from the prior art by including the steps of a patented process." *Ex parte Schweinert and Kraft*, 284 O. G. 758.

"Appellant's patent . . . relates to a process of pasteurizing . . . without . . . extraneous heat, consisting in shredding . . . then effecting the passage thereof between relatively movable confining walls . . . imparted complete homogeneity. . . . In the involved application . . . the object was . . . to impart complete homogeneity . . . emulsification . . . apparatus . . . essential features the same. . . . Claims are not patentably distinguished." *Baumgartner*, 25 U. S. P. Q. 455.

"The suggestion that it is a case of double patenting falls to the ground. . . . A valid patent cannot be granted for a process, unless the patentee tells how to practice it. If no existing machine will suffice, he must make one that will. If in so doing he exercises his inventive skill, there is no reason why he should not patent the new machine. . . . The question of double patenting can, in this connection, seldom arise, unless there is only one machine, or series of machines, which will perform the process. That the evidence shows was not the case here." *One-Piece Bifocal Lens Co. v. Bisight Co.*, 246 Fed. at 461.

"The Examiners in Chief . . . held that the method claims constitute but a recital, in other terms, of the same invention embodied in the apparatus claims of the patent. . . . The means, or mechanism, or apparatus, recited generically in broad terms in claim 1 of the patent must be present to carry out the steps of the method claim . . . therefore the claim is either coextensive with the appa-

ratus claim and the allowance of the former would involve a clear extension of the monopoly obtained by a grant of the patent or . . . the method claim recites but the function of the specific apparatus." *Ex parte Jacobus*, 317 O. G. 235.

"It is contended that the adjudication of the claims in the apparatus patent makes invalid similar claims in a method patent subsequently granted, and that after the adjudication upon the claims of the apparatus patent, the defendant was estopped to apply for and the Patent Office was without a power to allow similar claims in a method patent. . . . An inventor is entitled to apply for both a machine patent and a method patent, the Patent Office has the power to grant both. . . . Claims . . . for method . . . are valid." *H. K. Porter Co. v. Baldwin Locomotive Wks.*, 227 Fed. at 225, 226.

"Nor do I believe . . . that the patent is void for double patenting. Of course, the real question is the identity of the invention, and not the phraseology by which that invention is disclosed. . . . A substantial difference thus appears in the methods disclosed. . . . Double patenting cannot be sustained." *Pittsburgh Plate Glass Co. v. American Window G. Co.*, 276 Fed. at 200, 201.

"Where the apparatus claims involve nothing more than a series of means coupled with functions and the method claims a series of steps for performing the same function we consider that there is no patentable distinction, and we believe that there is no question but that the courts would hold appellant guilty of double patenting if he accepted two patents with claims such as claim 1 in one and as claim 18 in the other." *Sheehan*, 11 U. S. P. Q. 44.

"Method of line welding . . . welding machine. . . . The sole ground for the requirement of division is that the method can be carried out by other apparatus . . . as for example by that shown in the patent to Shea. We do



not understand that this fact alone furnishes a sufficient basis for a requirement of division under the Office practice. The Examiner does not state that the respective groups of claims would be classified in different classes or in different divisions. . . . Again the claims are so closely related that if taken out in different patents there might be danger of a holding of double patenting." *Wagner*, 4 U. S. P. Q. 18.

"An inventor, it is true, may not sustain a subsequent patent for an invention actually claimed and secured in a former patent. . . . But one who makes several patentable inventions that result in a new and useful machine or process, or both, may have as many separate valid patents as he makes patentable inventions. . . . But counsel argues notwithstanding this fact the patented process cannot be used without the patented apparatus, nor the patented apparatus without the patented process, and from this fact they deduce the conclusion that they are for the same invention. The deduction does not seem to be warranted. . . . As Congress has made no such exception, the courts may not do so." *Century Electric Co. v. Westinghouse E. and Mfg. Co.*, 191 Fed. at 352, 359, 360.

"I would not be justified in granting the patent. . . . The applicant . . . delayed the present application for eight years after the grant of the application of the apparatus patent before it came before me on appeal. It results that if the circuit court of appeals . . . should sustain the patent, applicant, after having enjoyed the monopoly to which he is entitled would be permitted to extend it in effect nine years by a patent upon the process." *Ex parte Edison*, 220 O. G. 1373.

"Where a patent with apparatus claims drawn in generic terms has been granted, method claims which are substantially coextensive with the broad apparatus claims of the patent should not be allowed to the same party in an application filed subsequently to the issuance of the

patent, since to do so would unlawfully prolong the monopoly." *Ex parte Sweetland*, 297 O. G. 397.

"In our view the Thibodeau machine and method are not the same invention but are separate inventions capable of being used and practiced without relation to one another, except always as each involves Dickinson's conception. . . . Therefore the defendants had a right to practice the expired Thibodeau method with any mechanism at hand except the machine of the unexpired Thibodeau machine patent. . . . When, for reasons of their own, the defendants selected and used the machine of Thibodeau machine patent, they did not practice the method of a dead patent; they infringed a live patent." *Schute v. Hildreth*, 8 Fed. (2) at 134.

"Where the prior patent sets forth ammonium as being only equivalent to the other alkaline substances, named such as sodium, potassium, magnesium and calcium and where no cross reference was embodied in that specification that anything was claimed in another case with respect to these, that applicant is not now entitled to claims in another and later patent based on another one of these several equivalent agents." *Gollmar*, 20 U. S. P. Q. 15.

"The claims in the patent will not read on the present appealed claims and . . . the present claims do not read on the claims in the patent. . . . It has not been shown . . . that an allowable Markush (1925 C. D. 126) type of claim could have been drawn to cover the species claimed here and in the patent. . . . It does not appear that the Office should compel an applicant to use a Markush type of claim. . . . The type of inhibitor involved in the appealed claims gives materially improved results. . . . The Examiner was in error in rejecting the claims." *Calcott*, 26 U. S. P. Q. 99, 100.

"Mr. Barnickel . . . discovered that a very good separation resulted by mixing a small quantity of alum or copperas (which are metallic sulphates) with the roily

oil. . . . There were roily oils which would not yield to the sulphate treatment. . . . It is apparent from the specification and claims of the second patent that the process claimed by the patentee was based upon the use of water softening agents. . . . It does not make out a case of double patenting." *Producers and Refiners Corp. v. Lehman*, 18 Fed. (2) 494, 495.

"We . . . feel the difference in scope of the claims is sufficient to warrant allowance of both sets of claims, one to the apparatus and the other to the method. . . . The method claims call for certain temperature conditions." *Uhle*, 21 U. S. P. Q. 591.

"The product defined by the involved claims . . . was produced by the process covered by the patent. . . . Appellant's contribution to the art consisted in molding chocolate under pressure so as to give it the proper and necessary consistency and strength to make it adaptable as a container for ices, ice cream and similar substances for which he has already received a patent." *Becker*, 24 U. S. P. Q. 123.

"As it does not appear that substitution of the long and short cotton fibres accomplishes a new and useful result, or any increased efficiency, it is believed that the appellant has not shown any patentable distinction between the claims of his present application and those of his patent. This being true, his present claims were properly rejected. He may not have two patents upon the same invention." *Fischer*, 15 U. S. P. Q. 310.

"The claims in applicant's prior patent are directed to a rubber mix compounded with such coal tar oil . . . boiling point is referred to . . . above 200 degrees. . . . The appealed claims are not allowable in the absence of any showing that some unobvious and unusual characteristic apply to that specific composition of oil." *Cowdery*, 24 U. S. P. Q. 124, 125.

"One divisional application, covering one process only, became No. . . . four years before the master patent for

the product came out of the Office; hence it is said double patenting resulted. . . . The more philosophical way to view the question is to ask whether the two patents . . . cover the same invention, when properly construed. . . . They do not; one being only for a process of making, and the other for the thing made, with disclosure of another process." *General Electric Co. v. P. R. Mallory and Co.* 298 Fed. at 584.

"As to the process claims we feel constrained to differ from the holding of the Patent Office. The present application was a division of, and was copending with, the application which resulted in the patent for the article. The patent, is therefore not a bar, even if the method or process was disclosed, inasmuch as it was not claimed. . . . The mere fact that the process and product claims might have been consolidated in a single patent furnished no ground for the rejection of the process claims." In *Zenk*, 267 Fed. at 328, 329.

"A separate patent application for each of the processes or products could be successfully maintained in the Patent Office and separate patents could issue thereon, if these applications were copending. The date of allowance and issue of any one of these patents would not determine the validity of any other of the copending applications, nor could these earlier patents be cited as prior art against the other application pending at the same time." *General Bakelite Co. v. General Insulate Co.*, 276 Fed. at 184.

"The question we have to decide is whether the description of another invention in a prior patent by the same inventor forfeits his right to take out a subsequent patent for such invention. . . . The invention of a machine, and a process employed in the use of the machine, being different things, it is difficult to see how the application for a patent on one should operate as an abandonment of any claim to patent on the other; provided of course, the application for the second patent is made be-



fore the statutory forfeiture of two years' prior use has run. . . . The patent in suit having been applied for within two years from the date of the machine patent, there was no abandonment of the second invention, though a description of such invention was found in the prior patent." *Eastern Paper-Bag Co. v. Standard Paper-Bag Co.*, 30 Fed. at 65.

"The claims must be read in the light of the disclosure on which they are founded. Reading claim 7 in accordance with this principle, we believe that it is not capable of practice except by a machine constructed and operated according to the patent claim 25, and, this being so, to allow a patent for it would be to offend against the rule which prohibits double patenting. . . . 'An invention is not made different by the mere fact that one is disclosed in a claim for an apparatus and the other in one form of a method or process. Where the one invention is disclosed, but one patent can issue.' " *In re Taylor*, 313 O. G. 456, quoting in *re Rowe*, 192 O. G. 519.

"A process and an apparatus . . . may be completely independent. . . . But they may be related. They may approach each other so nearly that it will be difficult to distinguish the process from the function of the apparatus. In such case the apparatus would be the dominant thing. But the dominance may be reversed and the process carry an exclusive right, no matter what apparatus may be devised to perform it." *Steinmetz v. Allen*, 192 U. S. at 559.

"Much has been said about the efficacy of the filing of the apparatus case . . . as a constructive reduction to practice for the process of the issue. . . . The invention was disclosed . . . and . . . might have been claimed therein. This being so, there is no doubt but that the . . . case is a constructive reduction to practice." *Bethke v. Scannell*, 273 O. G. 185.

"The filing of the process application cannot be considered as a constructive reduction to practice of the ap-



paratus, for it was not the invention involved in the application. . . . Appellant, in his original process application, does not disclaim any right to an invention for the device in which the process was conducted. He very truly says that it forms no part of the process invention, but that is far from either a disclaimer or an abandonment of his right to claim a patent for it." *Saunders v. Miller*, 146 O. G. 505.

"Process and an apparatus, while presumptively independent inventions . . . nevertheless may be so 'connected in their design and operation' as to constitute a unitary invention; . . . when constituting independent inventions they may not be claimed in one and the same application; . . . when so dependent as to constitute a unitary invention they may be claimed in one and the same application." *In re Frasch*, 122 O. G. 1048.

"If that noise be produced by a patentable method, there would seem to be no reason why a valid method claim should not be included with the claim for the combinations of parts shown in the device." *Lovell-McConnell Mfg. Co. v. Automobile Supply Mfg. Co.*, 212 Fed. at 204.

"Everett copied the claims for the apparatus patent within two years after it had issued. . . . But he did not copy the method claims until two years and four months after the patent had issued. . . . In reality the invention is integral. . . . It would seem to be absurd to permit him to make the apparatus claims and not permit him to make the method claims." *Leonard v. Everett*, 281 Fed. at 596.

"No defect in the process patent . . . can be predicated upon defects in the apparatus patent, and the fact that the first apparatus was defective is no reason for denying protection to either the patented process or the apparatus." *Petroleum Rectifying Co. v. Reward Oil Co.*, 260 Fed. at 182.

“Whether Carrier’s disclosed apparatus reveals invention is a question not before us—and immaterial. If the office had granted claims for both method and apparatus, that fact would not have vitiated the patent, . . . and, conversely, no more does the fact that it refused so to do, in the same patent at all events.” *Buffalo Forge Co. v. City of Buffalo*, 255 Fed. at 85, 86.

“An inventor has the right by contemporaneous applications to a generic and specific patent . . . when he has thus applied he shall not lose his generic patent because one of or more of the specific patents may happen to be issued first. . . . If the generic claim here is not for the process, but for the new article . . . the later and the earlier applications will be treated as continuous, for the purpose of saving the patent from the effect of an earlier issue of a specific patent.” *Badische Anilin and Soda Fabrik v. A. Klipstein and Co.*, 125 Fed. at 554, 555.

“It is clear that the patentees of the patent 1,449,127 recognized that certain other inorganic salts and certain other alkaline substances would serve as well as the specific nutritive and neutralizing substances designated in the claims of the patent, and that all of the substances are merely an equivalent of those disclosed by patent 1,449,103. No . . . new function or result was produced. . . . There was no patentable invention in patent 1,449,127.” *Fleischman Yeast Co. v. Federal Yeast Corp.*, 8 Fed. (2) at 202.

“If the thing claimed in the present application involves no invention beyond the thing claimed in applicant’s prior patent then the claims here in issue must be refused. . . . The thing reached after . . . is the production of esters from the halohydrins so formed. . . . Applicant admits that Richter suggests as a possibility the treatment of a mixture of chlorinated olefins to produce a corresponding mixture of esters or alcohols; but he does not regard this as sufficient. He insists that a reference must do more than suggest a possibility, that it

must also postulate a reasonable expectation of success. . . . The time has not come when a patent should be issued to a chemist who looking at a text book says to himself that the process indicated will not work . . . and finds that it does." *Ex parte McElroy*, 337 O. G. 475.

"Nor do we think that by abandonment of appellant's application for a product patent . . . appellant either conclusively admits that the process is old, or is estopped from denying that the process is old." *Mica Insulator Co. v. Commercial Mica Co.*, 166 Fed. at 443.

"To some tribunals these process claims might, and probably would express the invention better than the article claims, whereas to others the article claims may express the invention best. . . . If the process claims are only an obvious manner of producing the article, no great harm is done in allowing them in the same case with the article. On the other hand, and this seems to be true in the present case, where the article may be made by other methods, then the process claims should undoubtedly be allowed." *Ex parte Kilbourn, Smith and Kilbourn*, 221 O. G. 737.

"The Examiner required division. . . . The fact that the tube of peculiar shape covered by claims 3 and 4 is not the necessary result of the process of claim 1, which makes no reference to the form of the tube produced, is so clear as to require no argument or statement of reasons in support of it." *Ex parte Reid*, 96 O. G. 2060.

"It is not believed that any authority warrants the retention in one case of claims to a composition and the process of using it." *Ex parte Tschirner*, 97 O. G. 187.

"It is proper to prosecute claims 1, 2, and 3 in the same application with the other claims covering the shoe construction, for the reason that the first-mentioned group of claims covers an integral part of the shoes, which part is included as an element in some of the claims of the second group. Claims 14 and 15 should not . . . remain in the same application with claims 1, 2, and 3,

because the method is not limited to the mere production of the article, but covers other features . . . and . . . the article may be produced by other methods." *Ex parte Parent*, 98 O. G. 1970.

"The article covered in claims 3 to 6 can be made by other methods than that covered by claims 1 and 2, and . . . a disclosure of the article does not necessarily disclose the method. Division was properly required." *Ex parte Foulis*, 100 O. G. 232.

"If it appears that the process and product are classified separately, and, further, if it is clear that the process does not necessarily result in the product or that the product may be made by some other process, the inventions in such a case are independent and should be claimed in separate applications." *Ex parte Powell*, 99 O. G. 1384.

"In claim 8 he sets forth in detail the same process of making the die which is fully stated in claim 6 and in addition includes the step of casting a record from that die. In claim 10 he claims the record and describes it as being cast from the particular die set forth in other claims. . . . It is not intended to hold that the process of casting from a die is not an independent invention from the die and the process of making it." *Ex parte Clay*, 101 O. G. 2567.

"In this case the applicant may make a broad claim for the process. . . . And he may in the same application make a claim for one specific form or modification of the process embraced within the general class covered by the broad claim." *Ex parte Smith*, 16 O. G. 630.

"Each of the several 'acts' of 'the series of acts' constituting the process may be capable of performing separately its own peculiar function, and may be used independently of the others; but if together they coact in producing the final result they may be joined in a single application. . . . A claim can be made to the process as an entirety, and separate claims can also be made to the

sub-processes which go to make up the same.” *Ex parte McDougall*, 18 O. G. 130.

“Omission does not change the order in which the other steps of the process are performed, . . . the omitted step is not essential to the performance of his process, although it is an improvement and renders the process more practical. . . . The applicant may retain both the claims in the case.” *Ex parte Oxnard and Bauer*, 88 O. G. 1526.

“The appellant had invented an article and . . . not invented a patentable method. In view of the facts that the claims presented are in the wrong form, that these claims are in fact drawn to cover articles, though written in the form of methods . . . appellant should be permitted to change the form of his claims.” *Ex parte Trevette*, 97 O. G. 1173.

“As this Office first required division between claims to the lubricant and claims to a process involving the use of the lubricant, we feel there is a sufficient doubt on the question of division as raised in the original application, that such doubt should be resolved in appellant’s favor, and a second patent allowed covering the process claims.” *Kocour*, 24 U. S. P. Q. 392.



## CHAPTER 19

### OF ASSIGNMENTS, LICENSES AND ROYALTIES PECULIAR TO CHEMICAL PATENTS

The Patent Statute provides that "every patent or any interest therein shall be assignable." The Patent Statute makes no provision for the granting of licenses, nor for royalties. Many questions analogous to double patenting have faced the Courts in connection with both assignments and licenses. Other questions peculiar to patents on processes have arisen in constructing the law of licenses, especially implied licenses. The implied licenses which are of the greatest interest to chemists are those known as shop rights. In the absence of specific contract provisions, an employer has no rights in the inventions of his employees, except that he acquires shop rights to inventions made by his employees within the scope of their employment and worked out at the expense of the employer and in his working hours. A shop right thus is an implied license to work the invention of an employee so made. The circumstances of the particular case have to determine just what an implied license covers, whether it is free, whether it dies with the employer, and whether or not or under what conditions it is transferable. Few decisions of the Courts apply this phase of the law of patents to chemical inventions.

The decisions of the Courts relating to these and other licenses often turn on questions outside the scope of this book, and are largely found in the reports of the various State Courts. They have never been adequately studied. A patent license is one of the most difficult of legal instruments to draw, since it must cover many unforeseeable contingencies.

WHAT THE COURTS HAVE SAID

**I. Of Assignments**

“McAfee . . . in the course of his general employment as a chemist he was put for a time upon the specific work which resulted in the discovery. . . . There was no discussion or suggestion at any time of an invention, no agreement as to invention. . . . McAfee . . . as the result of negotiations with the Gulf Refining Company entered their employ. . . . They obtained from him his rights to the invention. . . . The Texas Company . . . alleged a specific contract for the invention of a specific thing. On the facts they failed. . . . That any general employment can be converted into a special contract for invention, so as to deprive an employ   of his invention, merely through the device of causing the employ   to be put upon special work . . . there is neither precedent nor reason.” *Texas Co. v. Gulf Refining Co.*, 13 Fed. (2) at 875, 876, 878.

“A patentable process developed and used by an employee while so employed and at his employer’s expense is as much within the reason of the statute as would be a patentable machine constructed or so developed.” *Barton v. Nevada Consolidated Copper Co.*, 13 U. S. P. Q. 24.

“Ladoff, also a chemist, was employed at laborers wages. He was not employed in research. . . . He conceived the idea of burning these pencils containing rutile, in a body of coke. . . . Learning that Ladoff had applied for a patent through others on his own account, and would not sign the application prepared for him, efforts were made to induce him to remain in the employ of the company, and to assign his invention to it. Failing in this a bill was filed to enjoin him . . . on the ground that he had verbally agreed on entering the employment . . . to assign his inventions to the company. . . . The bill was dismissed as unfounded . . . the company would un-

doubtedly own the patent if granted to Dempster . . . it would have to contract for it if granted to Ladoff." *Ladoff v. Dempster*, 166 O. G. 511.

"When the patents 337,298 and 337,299 were issued, the difference between them is that between 'an absorptive substance, or an absorptive substance adapted to be transformed into active material,' on the one hand, and 'active material, or material adapted to become active' on the other. . . . The terms . . . in the electrical art . . . are synonymous. . . . With the finding of the validity of the specified claims of 337,299, adjudge 337,298 to be inoperative, and prohibit its assignment." *Electrical Accumulator Co. v. Brush Electric Co.*, 52 Fed. at 137, 138.

"It is difficult to conceive how this court can compel the defendant to assign its patent, which not only embodies complainant's invention, but other inventions relating to the same subject-matter." *Gould Storage Battery Co. v. Electric Storage B. Co.*, 192 Fed. at 32.

## II. Of Licenses and Royalties

"It is difficult to see how any one can be licensed to use a process, without by necessary implication having the right to devise and build whatever apparatus exemplifying the process seems good to the license." *Dunkley Co. v. California Packing Corp.*, 277 Fed. at 998, 999.

"The plaintiffs' chemical steps which precede the distillation of waste soap lyes are a substantial and essential part of the mode or treatment of the special substance. . . . It is apparent that the Twichell process is applied to a different substance, and in no sense can be regarded as an equivalent for the chemical steps of the plaintiffs' process. . . . The plaintiffs are therefore entitled to judgment only for royalties upon glycerine produced by the defendant from waste soap lyes, by subjecting them,

not only to distillation, but to the preliminary steps." *Jobbins v. Kendall Mfg. Co.*, 270 Fed. at 672, 673.

"It seems that Lawther has another patent for some improvement in the stack of rollers. . . . The appellees purchased a set of these rollers . . . with the knowledge and consent of Lawther. . . . They contend that by this transaction Lawther gave his consent to their use of his process. We do not think that there is sufficient evidence of any such consent. The use of the rollers did not necessarily involve the use of the process." *Lawther v. Hamilton*, 124 U. S. at 11.

"The patentee took an active interest in the business of the firm (which . . . consisted solely of ruby-staining glass by the patented process). . . . Did his death terminate all rights on the part of the firm . . . to use the mufflers which had been constructed by the firm's money . . . the sole use and purpose of which depended upon the patented process. . . . The administration of that trust evidences . . . the right of the firm to continue its operations, which consisted wholly of ruby-staining glass. . . . The mufflers constructed . . . carried an implied license . . . and . . . the right to such reasonable extension and enlargement . . . as were needed to treat the output of that particular shop." *Mueller v. Mueller*, 95 Fed. at 156, 157, 158.

"An implied license . . . is coextensive with the life of the patents and with the needs of defendant's business in making and selling its product. And this conclusion applies as well to the apparatus as to the process or product, for the reason that the apparatus owes its origin and existence to the process and product, and has no value except as a means of performing one step in the process." *Wiegand v. Dover Mfg. Co.*, 292 Fed. at 261.

"A licensee is liable, not only when he uses the identical article covered by the patent, but also when he uses an article equivalent thereto." *Barber Asphalt Paving Co. v. Headley Good Roads Co.*, 283 Fed. at 239.

## CHAPTER 20

### OF CONTESTS BETWEEN RIVAL CLAIMANTS OF AN INVENTION

The Patent Statute provides for certain procedures in connection with "interferences" without defining an interference. The Courts have been forced to construe the word "interference" to mean a contest between rival claimants of an invention and to decide what is and what is not an interference within the meaning of the law, and also to decide what rules govern the respective ultimate rights of the parties.

In instituting interferences the Patent Office takes steps which result in embodying identical claims in each of the patent applications or patents involved. These claims, called "counts," then become the basis of all further proceedings. It thus becomes exceedingly important for an inventor to formulate claims to serve as counts which will describe accurately and in detail his earliest reduction to practice. Failure to properly lay this foundation may cost him his patent.

The further procedures in connection with interferences have become even more highly technical and complex than those relating to amendments. Most of these procedures have no especial connection with chemical patents and cannot be discussed here.

#### WHAT THE COURTS HAVE SAID

"The construction of patents, and a determination whether they interfere is a mixed question of law and fact, depending upon the construction of specifications and claims and the scientific or other facts which determine the means of these claims, and their effect."



Lowry v. Cowles Electric Smelting and A. Co., 56 Fed. at 495.

"It is therefore argued that, since the Blackmore reissue is for a generic invention and the Knietsch patent for a specific one, there can be no interference within the legal meaning of that word. But assertion is not proof, and the defendant has introduced no evidence . . . and, if . . . the method . . . shown in claims 6-11 . . . is consistent only with the catalytic method . . . such claims interfere with those of Knietsch, which are specifically confined to that alone. . . . The only reasonable interpretation of the quoted claims of the Blackmore reissue renders them a rather obscure description of the Knietsch discovery. . . . The patents in suit do contain claims in common and are therefore interfering patents." *General Chemical Co. v. Blackmore*, 156 Fed. at 970.

"In interference cases, if the counts are not ambiguous, they should be given the broadest interpretation which they will reasonably support, and a party who deliberately elects to claim his invention broadly is not in a position to insist that limitations be read into them for the purpose of avoiding the issue of priority." *Doherty v. Dubbs*, 20 U. S. P. Q. 149.

"It is argued . . . that inasmuch as the count was taken from the Frey patent, it should be construed as requiring a process in which heat is neither added to nor subtracted from the reaction zone. If the language of the count were ambiguous, we should be justified in going to the Frey patent for aid in construing the language. . . . The language which intimates that heat may not be abstracted from such zone." *Frey v. Wagner*, 32 U. S. P. Q. 241.

"Vreeland asserts he has made a patentable advance over Fessenden's disclosure. . . . In view of the difference in the claims . . . an interference suit will not be allowed. . . . Vreeland's claim 8 is 'word for word the same as Fessenden's claim . . . except for the addition

of the word 'abruptly' before the clause 'changing the frequency of such continuous wave train.' " *International Signal Co. v. Vreeland Apparatus Co.*, 278 Fed. at 472, 473.

"If Hartt . . . had in mind no means . . . of bringing the hot air in contact with the adhesive, it is difficult to see why he should now be given priority of an invention which includes all means of blowing hot air or hot gas . . . against the adhesive." *O'Donnell v. Hartt*, 24 U. S. P. Q. 382.

"We are of opinion, considering his application and his testimony, that appellant's alleged invention relates exclusively to the loading of sheet metal in its condition as manufactured in the steel mill, and not to such material when fabricated or partially fabricated into automobile parts. Whether the involved invention should be limited to sheet metal, as hereinbefore defined, need not here be determined. However, the involved counts ought not be given a construction broader than the invention disclosed by the parties, which, in our opinion, was not intended by either to relate to the loading of automobile parts, or other articles, capable of being packed in nested relation." *Chalmers v. Romine*, 16 U. S. P. Q. 138.

"Attention is called by counsel to a line of authorities which seem to sustain the proposition that an applicant will not be allowed claims which are broader than his disclosure. . . . The appellants now argue that the claims in question . . . are broader than his invention, as disclosed. But . . . this raises a question of patentability only. . . . For the purposes of this interference, we must assume the patentability of the claims to Kirschbraun, and will look only to the question of priority." *Trumbull v. Kirschbraun*, 20 U. S. P. Q. 50, 51.

"Proof that it is imperfect in operation, that it performs its functions in a crude way, or that it does not meet commercial requirements is not sufficient to establish inoperativeness in a patentable sense. . . . How long the

process could continue without passages with carbon . . . there is no very specific time limit which can be considered as rendering the device inoperative." *Doherty v. Dubbs*, 20 U. S. P. Q. 149.

"The question of Kendig's right to make the claims is dependent upon the construction and operation of the 'devices of his application.' We are embarrassed . . . since we have no definite testimony as to operation. The interference must proceed on the issue . . . including claim. . . . It is ordered, therefore, that the interference proceed, retaining counts 2 and 3 in the issue, and that the determination of Kendig's right to make these counts be deferred until final hearing, at which time the testimony taken in the case will give it further light on the matter." *Lombard v. Kendig*, 329 O. G. 539.

"The invention . . . was confined to retorts so constructed as to revolve continuously on their axis during the process of distillation. . . . One of appellant's witnesses . . . says he presumed that Willard did not think it necessary that it should revolve all around. . . . There is no sufficient evidence that Willard had attained to the idea at that period." *Allen v. Alter*, 3 App. Comr. Pat. 322.

"These claims having originated with Hauss they should be given an interpretation, if possible that will vitalize the disclosure in his specification. . . . Hauss's drawing and specification not only fully disclose the heated desiccating-chamber walls but carefully point out the advantages to be derived therefrom. Merrell, on the contrary shows no such heated walls . . . there is nothing to indicate that the idea ever occurred to him." *Hauss v. Merrell*, 261 O. G. 956.

"Peiler discloses no means for supporting the charge or gob within the terms of claim 1. While the punty supports the charge during suspension, and drops it in pear shape into space, it is not the support described in the Drey patent. Hence it does not come within the rule of

construction that, where counts are taken from the claims of a patent, the one copying the claims is bound by the meaning intended by the patentee." *Drey v. Peiler*, 287 Fed. at 1014.

"At that meeting Dr. Kratz read an essay. . . . We do not believe that any one regarded D. P. G. as a seriously preferable accelerator until after the Kratz paper, because that chemist was . . . the first to give comparative figures demonstrating the great saving of time following the use of D. P. G. He gave definite and persuasive reasons for the preference. We therefore incline to regard all the pre-Kratz work as merely experimental, and guided by no principle." *Dovan Chemical Corp. v. National Aniline and Chem. Co.*, 292 Fed. at 558, 559.

"If it is known how it could be produced at will and some utility had been demonstrated the invention would seem to have been reduced to practice." *Potter v. Tone*, 163 O. G. 729.

"That Larson, the trained scientist and bacteriologist arrived at his conception step by step and after long tedious and expensive experiments, bears the indicia of probability and truth. That Crowther, the skilled mechanic with no knowledge of bacteria or of their absorption of gases conceived unaided and without experimentation their destruction by suddenly releasing gas pressure . . . simply means the plucking of that conception out of the blue. That he did so we consider highly improbable, if not incredible." *Larson v. Crowther*, 329 O. G. 539. *Contra, Larson v. Crowther*, 26 F. (2) 780.

"There is no evidence that the process in question was invented by Lionne prior to . . . the date of the application. . . . There is no connection shown between the inventor, Lionne, and the knowledge in the possession of the agent of the plaintiff corporation. . . . There was at least in an experimental way, in these factories, prior . . . such use of this process with air brushes as to make



it incumbent on the plaintiff to show by satisfactory proof that Lionne's invention preceded the date of such use." *Lionne Co. v. Cushman-Hollis Co.*, 299 Fed. at 989.

"In this electrical insulating composition ground asbestos is the equivalent of soapstone in the proportions named." *Pratt and Johns v. Thomson*, 72 O. G. 1347.

"He mixed leucite with salt and steam and heated as one step, and then to this artificially prepared mixture he added alkali and oxide of an alkaline-earth metal and sintered as another step. Clearly this can not be held to be the 'one operation' of the count." *Cowles v. Rody*, 323 O. G. 479.

"Where a product can only be made by the particular process described, it is true that such process may be read into the claim." *Geltz and Hosack v. Crozier*, 140 O. G. 757.

"While there was a delay of about two and one-half years between the reduction to practice of the Shesan method and the filing of the Shesan application, the continuous use of it as standard practice was for less than two years of that period and we do not feel that such use was accompanied by acts from which it would be just to conclude that Stresau or his assignee had elected to abandon the legal right to patent." *Stresau v. Ipsen*, 25 U. S. P. Q. 484.

"The failure of appellant to successfully reduce appellee's invention to practice in its tests was because he deliberately refused to include the ordinary flux, which, although not mentioned in appellee's disclosure, was recognized by all skilled in the art as necessary to the making of a 'fused bond' or, 'fusion' within the meaning of the involved counts." *Campbell v. Evans*, 32 U. S. P. Q. 315.

"Appellant cites many cases to the point that little or no weight should be given to ex parte tests or demonstrations, and some cases to the point that no weight should be given to experiments made by one party in the absence of the other. We should be inclined to agree with appel-



lant that little or no weight should be given to these tests, were it not for the fact that, as the record shows, before the taking of any testimony upon behalf of appellee, and during the cross examination of appellant, appellant was invited by appellee's counsel to visit the testing plant set up by appellee and operate it himself, and that appellant declined to do so; that during the taking of testimony upon behalf of appellee a second invitation was extended to appellant to visit Depew, examine the mill that had been set up for purposes of the tests, and observe its operation, but appellant did not accept this invitation; later, during the taking of testimony by appellee, a third invitation was extended to appellant to go to Depew and observe the machine operate, and in this third invitation appellee offered to pay the expenses of appellant if he would do so; this invitation, like the others, was not accepted." *Hall v. Shimadzu*, 13 U. S. P. Q. 261.

"The burden of establishing that Ellis' disclosure was inoperative was imposed upon the party Rossiter . . . such case is not established if in the opinion of the examiner the disclosure is operative if the matter set out in the disclosure is modified or added to with regard to details within the non-inventive ability." *Rossiter v. Ellis*, 24 U. S. P. Q. 81.

"In its decision the board said:

In the Dubbs process, if the step of 'reducing the pressure on said heavier oil to effect the distillation of a portion of said oil' is inherent in his process as described, he has a disclosure which supports his right to make this feature of the counts even though there is no description thereof. . . . Upon this point Coast contends, first, that it was an error of law to hold that the burden of proof rested upon him and, second, that assuming such burden did rest upon him, he met the same by a preponderance of the evidence." *Coast v. Dubbs*, 33 U. S. P. Q. 93.

"We think a *prima facie* showing of inherency was made in the application of Dubbs, and that it was, there-

fore, incumbent upon Coast as the junior party to show lack of inherency." *Coast v. Dubbs*, 33 U. S. P. Q. 96.

"Since the invention relates to an obscure and highly technical art, the conclusions reached by the expert tribunals of the Patent Office should not be disturbed [by Court of Appeals of District of Columbia], unless error is clearly made to appear." *Lee v. Vreeland*, 4 Fed. (2) 956.

"That Mark's apparatus and process will operate successfully and commercially . . . is not before us. His application was allowed . . . and Greenawalt was charged with the burden of showing that it was not really operative for any practical or useful purpose. . . . This evidence is not of sufficient weight and certainty . . . to overcome the burden imposed." *Mark v. Greenawalt*, 138 O. G. 965.

"Petrie did not exercise reasonable diligence. It is true that he seems to have been poor. . . . All that Petrie did between 1893 and 1899 was to make a few experiments in private upon the same lines as his previous experiments without accomplishing or expecting to accomplish anything further." *Petrie v. De Schweinitz*, 99 O. G. 446.

"Professor Munroe . . . undertook to dissolve pieces of amber . . . following the method described by Flather, and was utterly unable to dissolve the amber. . . . It was incumbent upon Flather to rebut said testimony by that of other competent experts." *Weber v. Flather*, 103 O. G. 223.

"To produce a product—and this is a product, not a process invention—which would amount to invention or to an improvement over the prior art, the product . . . must contain a tungsten face-plate which will maintain the high standard recognized for the contacts having face-plates of this metal. It is not sufficient that a piece of tungsten has been welded or fused into a piece of steel, unless the tungsten retains the full power to with-

stand the test of which it is shown as capable by the prior art. . . . If both meet the standard set up by the issue, the poorer one, if prior in point of time, would prevail. But if either fails to meet the required standards of the issue it is not a reduction to practice." *Liebmann and Megrath v. Newcomb*, 283 O. G. 364.

"The invention is . . . expressed in a single count. . . . 'An electrode for use in electric arc welding. . . .' This is a broad count, and the junior party having deliberately elected to claim the invention broadly, must stand or fall upon the claim as drawn. Had he desired to protect a specific embodiment of the invention, he should have framed his claim to that end." *Holslag v. Hollup*, 285 Fed. 1006.

"Coast at a proper time moved to dissolve upon the ground, broadly, that the Dubbs application did not disclose the invention, the allegation particularly emphasized being that Dubbs 'does not disclose the drawing off of heavy oil from a pressure cracking system and holding it under pressure and reducing the pressure to effect distillation.' " *Coast v. Dubbs*, 33 U. S. P. Q. 92.

"Evans insists that 'whether or not such a slag will desulphurize iron is a matter of complete indifference,' since the count makes no reference whatsoever to desulphurization, and that, 'if, in the melting of iron, soda ash is introduced into the cupola in the amounts specified by Evans and Henning (then), the soda ash produces a slag which comes within the meaning of the count, and the formation of such a slag is a practice of the invention regardless of whether or not in any specific instance, the iron was desulphurized.' . . . Evans' theory as to the construction of the count, which seems to have been the theory adopted by the Board of Appeals, is the correct one." *Henning v. Evans*, 17 U. S. P. Q. 373.

"Henry and those in privity with him were actively engaged in disseminating knowledge of the process and under such circumstances we are of the opinion that the

doctrine of *Mason v. Hepburn* does not apply.” *Brogden v. Henry*, 21 U. S. P. Q. 282; see also *Pyzel v. Black*, 24 Fed. (2) 281.

“It is argued that Wagner filed two applications after he had been allegedly conducting his experiments at . . . and it was only in the third application . . . that Wagner was able to make a disclosure which did satisfy the count of the present interference. . . . There certainly was no concealment or suppression . . . anyone in that locality might view them. That Wagner was constantly experimenting with his processes does not argue that he had abandoned his first processes. . . . Reasonable experimentation is frequently encouraged. We are not disposed to extend the doctrine of *Mason v. Hepburn*, 84 O. G. 147.” *Frey v. Wagner*, 32 U. S. P. Q. 241, 242.

## CHAPTER 21

### OF PATENT SUITS AND PATENT EVIDENCE

The Judiciary Code gives to the District Courts of the United States original and exclusive jurisdiction in all cases arising under the Patent Laws, and prescribes how jurisdiction shall be obtained over any infringer.

The Patent Statute prescribes certain procedures, certain duties, and certain rights both for the plaintiff and for the defendant.

In addition to these statutory provisions, various doctrines and rules have grown up because of the peculiar nature of the patent right and out of the accumulated experience of judges who have observed the misleading character of some types of arguments and evidence. One of these rules is to the effect that evidence tending to invalidate a patent for prior use is insufficient unless it convinces the Court beyond a reasonable doubt.

After a Court has decreed that a patent is infringed and has directed an accounting, the procedure and the rights of the parties are governed by a wholly new set of rules.

The broad subject-matter of the foregoing procedures and rules lies outside the scope of this book, but the decisions peculiar to patents on discoveries are here assembled. The status of various secret processes in relation to infringement suits has been passed upon by a number of Courts, and their decisions are also here assembled.

#### WHAT THE COURTS HAVE SAID

##### I. Of Suits in General

“Patent Lawyers are quite generally possessed of the belief that a patent infringement bill in equity . . . is



sui generis. . . . This is counter to the conception of equity jurisprudence which we entertain." *Computing Scale Co. v. Toledo Computing Scale Co.*, 279 Fed. at 671.

"Questions of construction in the light of the prior art—particularly when there is expert evidence—as well as questions of infringement, are questions of fact. . . . It is for the court to construe . . . when expert evidence is not needed to explain terms of art, to determine the question of infringement as one of law." *Automatic Pencil Sharpener Co. v. Boston Pencil P. Co.*, 279 Fed. at 41.

"Here the Darby Corporation was charged with using a patented process for treating petroleum emulsions. . . . It is not remotely suggested that the Demulso Corporation follows the patented process. . . . It does not therefore have an absolute right to intervene. . . . Here, there is nothing lost except an opportunity to sell Demulso to Darby. . . . This decree doubtless has removed the Darby corporation from its list of prospective customers. . . . If appellant has any legal rights in the premises which have been or may be invaded by the Tretolite Co., such rights have not been adjudicated in this litigation." *Demulso Corp. v. Tretolite Co.*, 24 U. S. P. Q. 67.

## II. Of Demurrers or Motions to Dismiss

"The patent is for a process . . . nowhere is it alleged in the bill that the defendant uses or has used this process. The bill simply alleges that the defendant has made, and used, and sold certain furniture nails. . . . The demurrer is sustained because the bill does not contain any sufficient averment of infringement by the defendant of the process of complainant's patent." *American Solid Leather Button Co. v. Empire State Nail Co.*, 50 Fed. at 930.

"As the dismissal was upon motion, the facts upon which to predicate the invalidity must be such as are so

widely and commonly known that courts will take judicial notice of them without proof of their existence. . . To sustain the motion to dismiss, the court must take judicial notice, either that before the alleged invention of Wright particles of baked earthy material of predetermined color applied . . . were used or known in the roofing material art, or that in the employment . . . there is merely the substitution of one for another of old well-known materials. . . . It may be possible that through evidence of those skilled in the art connection between the Knight formula and the patented article would abundantly appear. But this cannot be adjudged from the face of the bill." *Wright v. Wisconsin Lime and Cement Co.*, 239 Fed. at 535, 536, 538.

"The patent is for acid arsenate of lead in the form of fine powder. . . . The powder of the patentee was finer than prior powders of the same substance, and to that extent the powder shows a difference in degree; but it was an unwarranted inference to say that the difference in degree did not produce a difference in the function of the substance when applied as an insecticide in the spraying of fruit trees." *Corona Chemical Co. v. Latimer Chemical Co.*, 248 Fed. at 494.

"The art of sticking a layer of fur to a felted hat body is not a matter of common knowledge . . . the question of invention, therefore, can only be determined by evidence." *Matteawan Mfg. Co. v. Emmons Bros. C.*, 185 Fed. at 815, 816.

"A demurrer can be sustained . . . only where the question of invention is free from doubt. . . . The patentee does this by means of a piece of very thick and substantial rubber tubing instead of glass tubing, which rubber tubing is capable of being quickly closed by an ordinary pinch-cock. . . . It certainly seems novel to use rubber tubing as an element. . . . The demurrer is overruled." *General Electric Co. v. Campbell*, 137 Fed. at 600, 601, 602.

"It is true that, upon the face of the patent, there is plausibility in the argument that the method covered by the claims involves only simple changes in the printer's art within the knowledge of every skilled workman. But it is also true that the complainant may be able to produce testimony which will convince the court that invention is involved." The demurrer is overruled." *Neidich v. Fosbenner*, 108 Fed. at 267.

### III. Of Injunctions

"The *ex parte* testimony and the fair construction of the patent raised a fair presumption of infringement, for the purpose of awarding a preliminary injunction." *Blount v. Societe Anonyme du Filtre, etc.*, 53 Fed. at 105.

"The Ellis patent has been frequently adjudicated valid. . . . Infringement seems to be clear . . . a slightly different composition procured by the use of petroleum jelly and kerosene . . . ingredients are within the general terms of the Ellis claims. . . . Injunction . . . may be issued." *Chadeloid Chemical Co. v. Daxe Varnish Co.*, 180 Fed. 1004.

"Judge Hough has held not only that the plaintiff's patent is valid, but that it is a pioneer. . . . An alloy of cerium and magnesium was held . . . an infringement. . . . The alloy of cerium and cadmium used by the defendant quite as much so. . . . A preliminary injunction." *Treibacher Chemische Werke, etc., v. Wolf Safety Lamp Co., etc.*, 214 Fed. at 414.

"Complainant may take an order for injunction *pendente lite* against manufacturing, or causing to be manufactured, etc., infringing mantels." *Welsbach Light Co. v. Freeman*, 100 Fed. 298.

"If it was a patent for a process, it would not be infringed by selling the product, and no conditions should have been annexed to the exercise of the vendor's rights." *Welsbach Light Co. v. Union Incandescent Light Co.*, 101 Fed. 131.

“Experts whose affidavits appear in this record, and counsel whose familiarity with the subject and whose candor and fairness in presenting it commend them to the favorable consideration of the court, differ fundamentally on the principle of action involved in the defendant’s device. . . . The proper and safe course to be pursued . . . is to await a hearing on the merits.” *Thomson-Houston Electric Co. v. Wagner Electric Mfg. Co.*, 130 Fed. 902, 903.

“The defendants strenuously maintain that they do not infringe. . . . Their process is covered by a patent and their experts are confident that they do not use the Stevens process. This important question ought not to be determined on affidavits. . . . Many theories now advanced may not be able to stand the test of cross-examination.” *Celluloid Mfg. Co. v. Eastman Dry Plate Film Co.*, 42 Fed. at 159, 160.

“The complainant obtained from Allen a piece of a broken tube, which was subjected to chemical and mechanical analysis. The results of these analyses are given in affidavits of chemists. They do not establish that the process of manufacture used was the same as that described in the patent, though they have some tendency to show that the materials were probably the same. . . . An affidavit, introduced by the defendants . . . swears that the process which he follows . . . for the defendants is a secret process . . . entirely different from that of the complainants; that he subjects the material to a heat . . . which would utterly destroy the tubes of the complainants. . . . There was not sufficient proof . . . to justify . . . the injunction.” *Societe Anonyme du Filtre, etc., v. Allen*, 90 Fed. at 816, 817.

“The court must have more than a suspicion that the defendant has violated its injunction before it can hold him to be in contempt.” *General Electric Co. v. McLaren*, 140 Fed. at 877, 878.

"Nesbeth purchased from defendant, about six weeks after the patent in suit was granted, a record. . . . Complainant insists that this evidence is sufficient to establish the fact that defendant was . . . manufacturing and selling records made under the process of the patent in suit. . . . It may have been made prior to that date." *National Phonograph Co. v. Lambert Co.*, 125 Fed. at 389.

"It is extremely difficult, not to say hazardous, for a court to dissect, analyze and weigh affidavits . . . the witnesses should be subject to a most rigid cross-examination. . . . I am unable to see how the adhesion of the minute quantity of active material . . . can possibly . . . two witnesses assert it as a fact. But one witness contradicts it. . . . This proceeding is criminal in its nature. . . . The burden of proof establishing violation of the injunction is upon the complainant, and the defendants are entitled to the benefit of any reasonable doubt. The motion is denied." *Accumulator Co. v. Consolidated Electric S. Co.*, 53 Fed. at 796.

"The case therefore presents the exceptional condition that the respondent can only run its plant to make carborundum by using the Cowles process, and Cowles cannot, so long as the carborundum patent stands as an exclusive grant . . . smelt silica to produce carborundum. . . . I fail to see how the issue of a conditional . . . injunction in the case could now affect other users of the process." *Electric Smelting and A. Co. v. Carborundum Co.*, 189 Fed. at 712, 713.

#### IV. Of Interrogatories

"In a case like this I think interrogatories in the language of the claims are objectionable. There well may be a difference of opinion, for instance, as to what is a 'fibrous material,' whether a sheet is 'impregnated,' whether the substance is 'colloidal.' . . . Chemical cases cannot be compared in this regard to simple mechanical cases."



A. B. Dick Co. v. Underwood Typewriter Co., 235 Fed. at 301.

"The plaintiff must prove that the defendant is practicing a process made up of several elements. . . . It would be material evidence to procure an admission that in its process, whatever that was, the defendant used certain of those elements. . . . The result may be to compel the defendant to disclose how far it goes in the process, though it does not use the process as a whole." Grasselli Chemical Co. v. National Aniline and Chem. Co., 282 Fed. at 381.

"The bill broadly and aptly charges infringement. . . . If it were conceded that the process of the Norton patents and the product of the Norton machine produced through following such process do not and cannot infringe the Hatchek process and product, we are nevertheless first confronted with the inquiry whether from the answers to the interrogatories it does conclusively appear that the alleged infringing process follows exclusively the Norton patents, and that the product is the result solely of the Norton process. . . . It cannot be concluded that the general charge of infringement as made in the bill is limited to such infringement, if any, as would arise from a strict following of the teachings of the Norton patents, and by no possibility from a deviation therefrom in such manner as to involve infringement of Hatchek. . . . Deny the motion to dismiss the bill." Asbestos Shingle, S. and S. Co. v. Asbestos Shingle Co., 239 Fed. at 541, 542.

"Interrogatory number 73 is, as follows: 'Describe, in accurate detail, each and every process employed by the defendants, or any of them, in treating fur skins since February 16, 1926, to the date of the commencement of this action, from the time of the receipt of said fur skins by the defendants, or any of them, to the time of the delivery of said fur skins to the customer, describing the same with such fullness as to enable the duplication of the

processes by a skilled fur dyer; setting forth the temperatures, times and chemicals (and amounts and proportions thereof) in each step of the treatment; and furnish the Solicitor for the plaintiff with a sample of each such skin in its final form; and if the defendants, or any of them, have not any of such skins, so state.' The answer to the interrogatory should require that degree of certainty and detail of description which would enable a person skilled in the art, namely, a skilled fur dyer, to duplicate the processes practised by the defendants. . . . One of the purposes of the interrogatories is to simplify the trial and to reduce the issues. This can be accomplished by the defendants answering the interrogatory." *Steinfur Patents Corp. v. Meskin, etc.*, 11 U. S. P. Q. 258.

## V. Infringement Must Be Proved

"In the case of a mechanical device like a multiple drill or a typewriting machine the deliverances of the experts are mere aids to the comprehension of the structure. . . . But when we come into the field of electric, magnetic, and chemical patents the situation is changed. There are things which the independent senses cannot appreciate, which cannot be seen or felt or heard. The flow or flux of electric or magnetic currents, the reactions of bodies into some chemical union or disunion, are matters in which a court must perforce depend upon the assertions of some one who has made a profound study of the matter, and the weight to be given to the testimony will necessarily depend upon the measure of confidence which the witness inspires." *Sundh Electric Co. v. General Electric Co.*, 204 Fed. at 279.

"Infringement is not only a question of fact, but is a tort or wrong, the burden of establishing which, as in all torts, clearly rests on those who charge such wrong. The absence of actual fact proof is not met by the presence of expert speculations no matter how voluminous." *Fried.*

Krupp Aktien-Gesellschaft v. Midvale Steel Co., 191 Fed. at 591.

“The burden of establishing infringement is upon the party charging infringement. It is a question of fact, and must be established by clear and convincing testimony, and proof of the fact may not be met solely by expert speculation.” *Petroleum Rectifying Co. v. Reward Oil Co.*, 260 Fed. at 184.

“The mere fact that the same result is obtained by operation of an apparatus is not conclusive of infringement.” *Marconi W. Tel. Co. v. Kilbourne and Clark Mfg. Co.*, 239 Fed. at 354.

“Infringement . . . depends upon . . . whether the defendant employs the arc, as distinguished from the incandescent, principle in its electric furnace. . . The burden is upon the complainant to establish by a fair preponderance of testimony—and not by mere scientific speculation—that the defendant does use the arc.” *Union Carbide Co. v. American Carbide Co.*, 181 Fed. at 111.

“Analyses by both the defendant’s and plaintiff’s experts showed the presence of ammonia by what is called the Kjeldahl method. . . . It is no defence to a charge of infringement of a patent for a product . . . to assert ignorance of the reactions which take place.” *General Bakelite Co. v. Nikolas*, 225 Fed. at 554, 555.

“The most difficult question is as to the meaning and validity of claims 1 and 2. At the trial it was tacitly assumed that the phrase ‘drying surface heated in excess of 270° F.,’ meant that the actual surface of the rolls should have that temperature while carrying the film. Upon this appeal the plaintiff argues that the meaning is not that, but that the rolls shall be heated by steam of not less than 270°. It is true that he said in the specifications . . . ‘In practice I have found cylinders heated by 3¼ atmospheres of steam pressure to give excellent results.’ Three and a quarter atmospheres gives 278°, and we now know that the surface heat under the film at such

an inside temperature will be considerably less than 270°. Hatmaker did not know this, and perhaps does not yet believe it; he may have supposed that the surface heat under the film at such pressure would be above 270°. . . . Surface temperatures under such conditions are difficult to ascertain, and perhaps it is enough to say that he has not established that the effective heat used by the defendants was ever as great as 270°. For proof he relied for the most part upon the melting point of certain metals, which his experts put on the surface of the roll after it had been stopped. It took some seconds to do this and to observe the melting, and the roll, relieved of the evaporating film, quickly regains its losses. The defendants used a thermo-couple or electric thermometer whose readings the plaintiff challenged. The experts from the Bureau of Standards, called in by the judge, tried the plaintiff's method, and found that its results were unreliable, and while they did not stop the roll, their reasons just given, for declining, seem to us good." *Hatmaker v. Dry Milk Co.*, 34 Fed. (2) 611.

"That Court accepted—and we think rightly—in view of the defendant's expert, who testified: . . . 'So I would say these tests are in no way comparable to anything that takes place in the mouth, and are of no value to determine whether there is any calcifying action or not,' and held that 'a calcifying dentifrice that will not calcify is of no use. It is inoperable and therefore not useful.' " *Hoover v. Eckerd's Cut Rate Medicine Co., Inc.*, 16 U. S. P. Q. 328.

"But again it seems to us that we need not depend upon the technical evidence, which, as is so common in chemical cases, is confused and uncertain." *E. I. du Pont de Nemours & Co. v. Glidden Co.*, 18 U. S. P. Q. 242.

"Nor is there proof that either process would develop a stencil sheet that would not require additional moistening after a substantial time had elapsed, as is the case with the Hill invention. . . . There is no satisfactory proof



that Father Calhoun's stencil sheets remained usable for extended periods of time and were free from the difficulties which had long beset the art." *A. B. Dick Co. v. Simplicator Corp.*, 34 Fed. (2) 939.

"Imitation is the sincerest form of flattery. The defendants surely must think that the plaintiff's filament is an excellent one or they would not have made one exactly like it. When the defendant's expert . . . declined to divulge to the Court the formula of the filament manufactured by the defendants . . . the defendants were neither sincere nor frank." *General Electric Co. v. Wabash Appliance Corp.*, 32 U. S. P. Q. 188.

"But the brick were laid up in a composition . . . which on analysis by Prof. Ellery was found to contain. . . . I do not find the slightest warrant in this analysis for a conclusion that the composition used by the defendant . . . contained any silicate of soda whatever. . . . The witness failed to point out why or how he concluded that silicate of soda was used. . . . Infringement must be proved. It cannot be surmised." *Hentschel v. Carthage Sulphite Pulp Co.*, 169 Fed. at 128, 129.

"The analysis of the Swan manicure pencil compound made by plaintiffs' expert Fuller is severely criticized by defendants' expert Herstein. The former reported, among other constituents, kaolin, commonly called clay. This is not a chemical entity which is determined per se in a chemical analysis. If the analyst finds two separate things, alumina and silica, and if the ratio between the two is such as would correspond reasonably with the composition of kaolin, then kaolin may be reported as the sum of the alumina and the silica." *Northam Warren Corp. v. D. F. Newfield Co., Inc.*, 22 U. S. P. Q. 314.

"Appellant Van der Grinten, a chemist and chemical engineer of long experience, testified that he personally had made tests in which . . . he had transformed . . . and that, it is, therefore, a reducing agent. . . . Testimony of appellee's experts that thiourea is not a reduc-



ing agent appears to be based partly on the fact that they had never read or heard that it is a reducing agent. . . . Their testimony should not prevail against that . . . based on actual tests." *Van der Grinten v. Dieterich-Post Co.*, 31 U. S. P. Q. 33.

"It may be true that a matrix made of such other materials may not be successfully peeled from the mosaic without injury to the matrix, but the evidence does not warrant such a broad conclusion, and it can not be supported by judicial knowledge." *Boynton v. Chicago Hardware F. Co.*, 26 U. S. P. Q. 31.

"There is some validity to Dr. Curtis's criticism of the accuracy of such photographs in that they show only one place in cross-section. However, it is reasonable to assume that the grain contour shown as irregular in several sections of the same wire would show the same lack of pattern in its other aspects. In absence of any showing to the contrary, this presumption will be considered as establishing the fact." *General Electric Co. v. Anraku*, 25 U. S. P. Q. 316.

"The complainant had a careful and competent chemical analysis made of the violettan prepared and sold by the defendant. The defendant, although it had the opportunity, did not have a chemical analysis made of any of that violettan. . . . Decree for the complainant." *Haarmann-de Laire-Schaefer Co. v. Van dyk and Co.*, 165 Fed. at 935.

"Two ways, and two ways only, to produce the product . . . are shown to be known to the art. . . . Complainant shows that the product is within the definition and responds to the test of the claims. . . . If defendant . . . could at least show by affirmative proof that some one or more steps (or all the steps) : . . had not been followed. . . . In the absence of any such proof, complainant would establish a *prima facie* case of infringement." *Badische Anilin and Soda Fabrik v. A. Klipstein and Co.*, 125 Fed. at 557.

“The analysis of defendants’ ink by the complainant’s experts shows the presence of vaseline and other constituents entering into the complainant’s combination. . . . Defendants’ . . . failure to meet complainant’s analysis by a denial leaves me in no doubt that the analysis is substantially correct.” *A. B. Dick Co. v. Belke and Wagner Co.*, 86 Fed. at 150.

“Beyond merely elementary propositions, the court cannot take its chemistry from counsel. The obscure actions and reactions of chemical processes require for their comprehension the study and investigation which qualify the expert, and the expert’s statement should be given as other evidence is, with full opportunity for cross-examination. . . . Defendants’ dyestuff is the dyestuff of the patent. If it were not, complainant’s *prima facie* case as to infringement might have been utterly demolished in a dozen pages of affirmative proof. The circumstance that defendants have chosen instead to devote their energies, at great cost of time and labor, to elaborate and refined criticisms of complainant’s proof, is persuasive to the conclusion that it was the only thing they could do.” *Badische Anilin and Soda Fabrik v. A. Klipstein and Co.*, 125 Fed. at 558, 559.

“The court must be informed by scientific experts as to what elements are introduced into the flour by this process, and their effect upon it as an article of food. . . . We have no evidence. . . . The defendants have the burden of proof, and their defense must fail.” *Naylor v. Alsop Process Co.*, 168 Fed. at 915.

“Three competent witnesses have substantially testified that while they cannot state definitely as to the cause of the precipitation or in what manner the phosphorus combines . . . yet in their judgment the use of phosphate . . . produce the desired functional result. . . . If the steps employed by the defendant were based upon a different principle it should have been proven.” *Malignani v. Hill-Wright Electric Co.*, 177 Fed. at 434.

“The defendant has introduced no expert testimony explaining these patents and publications, and the court is left to the presumption that the patent itself such an amount of change from the prior art as to entitle it to the presumption which attaches to a patent.” *Salt’s Textile Mfg. Co. v. Tingle Mfg. Co.*, 227 Fed. at 118.

“Such expert testimony as there is upon the subject indicates that the Armstrong invention is not a practical one. . . . Another witness—an expert . . . gave it as his opinion that the machine was utterly impracticable. There was no testimony to contradict this.” *Streator Cathedral Glass Co. v. Wire-Glass Co.*, 97 Fed. at 953.

“An experienced witness . . . examined and describes with particularity the defendants’ spike-making machine. According to . . . his affidavit those machines are the same, in construction and operation, as the machine of the Goldie patent. . . . Defendant company . . . does not at all explain the defendants’ machines or method. . . . The defendants should have given the court facts, and not bare opinions.” *Goldie v. Diamond State Iron Co.*, 64 Fed. at 239, 240.

“The witness called as an expert . . . testified . . . that the invention of the defendant was, in his opinion an infringement. . . . Whatever weight may be given to this . . . expert opinion, the question of infringement is one for the court.” *Taber Bas-Relief Photograph Co. v. Marceau*, 87 Fed. at 872.

“The defendant did not rely alone upon the difference between the analysis of its alloy and that of the patent in defending the charge of infringement, but proceeded to show by physical facts that Phoenix Metal is not Adamite. On the other hand the plaintiff produced no evidence of physical facts in support of its charge that Phoenix Metal is Adamite. . . . In fact . . . failed to prove infringement.” *Pittsburgh Iron and Steel F. Co. v. Seaman-Sleeth Co.*, 248 Fed. at 713, 715.

“If it employs the variable constant, it does so in an uncertain way, merely touching the edge of plaintiff’s field. The trespass is not clear.” *Northern Equipment Co. v. McDonough Automatic R. Co.*, 300 Fed. at 493.

“It seems to be supposed that dentists are proper experts to define the meaning of chemical terms. But if they have not a scientific knowledge of chemistry, they are not experts in the application of chemical terms.” *Allen v. Hunter*, 6 McLean 303.

“In this situation, the man ‘skilled in the art’ means a chemist, when slight errors as to light, heat and other details may make a difference. The phrase is always relative.” *A. B. Dick Co. v. Barnett*, 287 Fed. at 577.

“While the burden of proving infringement is upon the plaintiff, it developed that the plaintiff’s expert had never analyzed any of the defendant’s product, and that his actual experiments . . . were made under conditions in no wise identical with those obtaining in the manufacture of the defendant’s product. . . . The history of the liquor submitted to him by plaintiff was unknown to him. . . . Instead of spraying the liquor in the open air to obtain oxidation, he sprayed it in a room. Instead of allowing the sprayed liquor to fall through eight feet of space, he sprayed it through four feet only. The nozzle . . . was not of the same make. . . . He heated his liquor to a temperature of about 200° F. . . . whereas at the York Haven plant 158° to 167° F.” *Robeson Process Co. v. Robeson*, 293 Fed. at 79.

“A finding whether the earlier device, if later, would have infringed the patent, is not helpful in determining whether the device of the later patent infringes the earlier one. . . . Equivalency is not mutual.” *Dunn Wire-Cut L. B. Co. v. Toronto Fire Clay Co.*, 259 Fed. at 264.

“Inasmuch as the claim is for a process of manufacture, infringement must be shown by satisfactory proof that defendant uses the process of the patent. Similar-

ity or even identity of appearance in the product will not suffice." *Schwartz v. Housman*, 88 Fed. at 520.

"The burden of proof was upon the complainant to show that the products imported by defendants were derived from the sources named in the patent after disclaimer. The testimony of the experts for complainant fails to establish this fact, and it is therefore insufficient." *Societe Fabriques etc. v. Lueders*, 142 Fed. at 754.

"The Blumenthal powder cannot be identified except as the result of the patented process, and an analysis of the powder of another manufacturer does not disclose that it was made by that process, except upon the theory and prima facie proof that no other existing process could make it. . . . The defendant's article was not made by the patented process." *Blumenthal v. Burrell*, 53 Fed. at 107, 109.

"Doubts are expressed by the expert called by the complainant, whether the device can be made in that way, but the proofs introduced by the respondents are entitled to greater weight than the opinion of any expert, as the question is one which can be demonstrated by practical operation and experiment." *Hudson v. Draper*, 4 Fish. 256.

"When the charge of infringement was brought to defendant's knowledge he refused to permit an agent of complainants to inspect his patent. This agent later secured brief access at night, observed, noted, and carried away some of the froth then being produced. This agent is a mining engineer and metallurgist. He describes the defendant's plants, and gives it as his opinion . . . that the process therein was substantially that of the complainants. Dr. Chandler analyzed the froth so secured, and found the components practically the same as those of froth from samples . . . treated by complainants' process, and Dr. Chandler pronounced it as his opinion . . . that defendant's operation were of complain-



ants' process. . . . Defendant was infringing." *Minerals Separation, Ltd. v. Hyde*, 207 Fed. at 962, 963.

"Upon the argument of this motion it was asserted, and the assertion disputed, that within the field of the patent, viz., the chemistry of coloring matters, the art was so little practiced here that the best expert testimony could only be secured by commission. The interrogatories are therefore allowed, under the arrangement as to method of taking proof before the commissioner, which was suggested by the court, and apparently assented to by council." *Holiday and Sons v. Schultze-Berge*, 57 Fed. at 660.

"Laboratory tests cannot turn the balance in the scale against the practice use. The testimony of experts that a device will not work is of no value, if it does work." *Medusa Concrete W. Co. v. Ceresit Waterproofing Co.*, 271 Fed. at 123.

"It is insisted, however, that defendants have demonstrated, by practical experimentation with a plant . . . of the Deighton patent, that the results are practically the same as those obtained by the Jones process. . . . No opportunity afforded the plaintiffs to inspect the plant or witness its operation. . . . Were this evidence admissible at all, we are satisfied it is met by the fact that if the Deighton patent had been adapted to the Jones process, it is scarcely possible that its merits should have failed to seize upon the attention of manufacturers." *Carnegie Steel Co. v. Cambria Iron Co.*, 185 U. S. at 420, 421.

"The experiments were conducted by the appellee's employees. The chief operator testified that there were strict orders against the presence of visitors, and that neither the appellant nor any one in his behalf was invited to be present. Evidence of experiments thus conducted by an interested party, and in the absence of his adversary, is always received with suspicion, and is more or less discredited." *Carson v. American Smelting and R. Co.*, 4 Fed. (2) at 465, 466.

“Experiments, to be of value as evidence on such an issue, must have been made under circumstances similar to those constituting the premises from which the original event is alleged to have been the conclusion.” *American Bell Telephone Co. v. National Tel. Mfg. Co.*, 109 Fed. at 1019.

“Complaint is made that this was arrived at by comparing the strength of the infringing bulbs with the strength of clear bulbs produced by the plaintiff, but the plaintiff had none of the defendant’s clear bulbs, and the defendants did not offer to supply them. The inference is clear that their strength would not have substantially differed.” *General Electric Co. v. Sava Sales Co.*, 29 U. S. P. Q. 63.

“Hogan’s testimony relates only to ex parte tests made by him and it is well settled testimony of this kind is entitled to but little weight . . . it does not appear that the apparatus which Hogan used was built strictly in accordance with the Vreeland disclosure. . . . Obviously, if Vreeland wished to establish the operativeness of the device as of the date . . . it was incumbent upon him to have used apparatus which was known to the art at that time.” *Lee and Hogan v. Vreeland*, 336 O. G. 754.

“The plaintiff’s assignor in applications for a British and a German patent described his invention as . . . made in a special way. . . . The exigencies of the patent authorities in these foreign countries may have been such as to make him willing to accept a narrower patent there. . . . The evidence was relevant but not conclusive.” *Oriental Tissue Co. v. Louis DeJonge and Co.*, 234 Fed. at 896.

## VI. Of Proving Prior Art

“The Courts have recognized the rule that the oral testimony of witnesses speaking from memory only in respect to past transactions and old structures claimed

to anticipate a patented device, physical evidence of which is not produced, is very unreliable, and that it must be so clear and satisfactory as to convince the Court beyond a reasonable doubt before it will be accepted as establishing anticipation." *Townsend v. Lorraine*, 283 Fed. at 811.

"The proof of the prior public use of a patented article or process sufficient to defeat the patent must be such as to leave no reasonable doubt of the prior public use more than two years before making the application for the patent. . . . These and other cases recognize, also, that in general the oral testimony of date of the prior use should find corroboration in evidence of contemporary records or memoranda, or physical exhibits before striking down a patent because of prior public use." *General Insulating Co. v. Union Fibre Co.*, 261 Fed. at 390.

"There certainly is no evidence that the experimental stencil sheets could be stenciled long after manufacture without moistening, or were operable long enough for practical commercial use. The defense fails. Probability—even extreme probability—is not enough, and anticipation cannot be predicated upon anything less than satisfactory proof." *A. B. Dick Co. v. Simplicator Corp.*, 30 Fed. (2) 715.

"The samples of the results obtained, and which are before the Court, are of little or no evidentiary value, as it plainly appears of record that such products are not stable and are apt to change from time to time." *Rositer v. Ellis*, 24 U. S. P. Q. 84.

"She was examined very fully, and carefully cross-examined. . . . Her process in all essential particulars was the same as that of the patent. . . . She produced her original design book, whose contents she clearly explained, and original samples of stockings whose genuineness as to character and date of work thereon, or construction thereof, was established beyond a reasonable doubt. . . . Her three witnesses . . . former employees

. . . satisfactorily corroborated her. . . . Catalogues or advertisements, 1908-1912, of Lord and Taylor . . . were produced, which Miss Mayer was satisfied illustrated Mrs. Handschin's work. She also produced perforation designs . . . for reordering purposes." *Marchese Sisters E. Corp. v. Gotham Silk Hosiery Co.*, 282 Fed. at 1006, 1007.

"The testimony measures up to the full requirements. It is clear. It is detailed and specific. It comes from credible and disinterested witnesses. . . . It is corroborated in important particulars. . . . The purpose was to use it commercially . . . a machine was built to do this work. It was no doubt crude . . . but it contained all the essential elements of the Sarfert Machine. . . . It was used steadily . . . was replaced by a second machine of a somewhat different pattern, but not essentially different." *Sarfert Co. v. Chipman*, 181 Fed. at 524.

"Going back two years. . . . There was some advertising done. This is an offer to sell, a bid for customers, but is not a sale. . . . An advertisement . . . contains a picture of a slipper with a sole of different material from the upper, and an illustration of the construction showing 'upper felt' . . . proceeding from top to bottom. This shows complainant's construction . . . but not the process." *Daniel Green Felt Shoe Co. v. Dolgeville F. Shoe Co.*, 205 Fed. at 752, 753.

"It requires much less testimony to satisfy a court that the Messrs. Hart, who had brazed, and welded, and but-welded, for years, conceived and carried out the idea of but-welding instead of brazing . . . than it would be to satisfy a court that they had made a new, complicated machine." *Lee v. Upson and Hart Co.*, 43 Fed. at 671.

"The complainant has not introduced any expert testimony to controvert the opinion of the expert for the defendants, or to support the chemical theory. . . . It appears by the cross-examination of the expert for the defendants that there are few subjects about which there is



so much dispute and doubt as the constitution of the starch granule. . . . Testimony has been given for the complainant that since the introduction of the process of the patent an extraordinarily active fermentation takes place . . . decree for an injunction." *Frankfort Whisky Process Co. v. Mill Creek Distilling Co.*, 37 Fed. at 541, 542.

"It is incumbent on the defendants, therefore, to show that the prior use which is set up was so far appreciated at the time, and adopted or followed, as to create a well-understood, if not an established practice . . . not something . . . which is now hunted up and brought forward simply for the purpose of defeating the patent. . . . They were asked who . . . would confirm their statements . . . and they both declared . . . they would be known to some workmen. But . . . workmen . . . upon being called . . . professed that they knew nothing of any such practice." *Ajax Metal Co. v. Brady Brass Co.*, 155 Fed. at 416, 419.

"The contention that the practice of this anticipatory method was not established because the evidence thereof rested upon the recollection of witnesses unsupported by record evidence cannot prevail against the showing that the witnesses were testifying not to their knowledge and recollection of an isolated practice of many years previous . . . but concerning a practice which had been begun prior to the filing of the patent application and had been continuously carried on under the observation of the witnesses from that time to the date of trial." *Remington Rand v. General Fireproofing Co.*, 26 U. S. P. Q. 38.

"Norwood and his son were allowed by the inventor the unrestricted use of the patent during the period mentioned, without injunction of secrecy or other condition. This is sufficient to constitute a public use." *Manning v. Cape Ann Isinglass and Glue Co.*, 108 U. S. at 465.

"Worley . . . communicated his process . . . to others, and used it openly in McCabe's factory, for a period of



six years before applying for his patent. It has been repeatedly held by the court, that a single instance of public use of his invention by a patentee, for more than two years before the date of his application for his patent, will be fatal to validity of his patent when issued." *Worley v. Loker Tobacco Co.*, 104 U. S. at 343, 344.

"He made different copies or duplicates . . . perhaps 8,000, all by the same process. . . . The practice . . . is both public and commercial use of the process, and plainly was not of the experimental character 'solely to test the qualities of the invention,' . . . which is the well-recognized exemption from the public use prohibited by the statute . . . no actual change in the process . . . is pointed out . . . no evidence appears to ascertain . . . the need of tests, or the reasonableness of the time." *National Phonograph Co. v. Lambert Co.*, 142 Fed. at 166.

"We cannot credit his story that Catlin's invention was practiced . . . 34 years before. . . . When Catlin made his proposal years later it was met by these same men with the most discouraging skepticism. The inference is irresistible that what Herreshoff describes did not take place; he is mistaken. It is enough to say of this and all the so-called uses that they have not been proved beyond a reasonable doubt." *Rumford Chem. Wks. v. New York Baking P. Co.*, 134 Fed. at 389.

"All that the evidence upon this point shows is that Gandy ordered all his canvas made by the Mt. Vernon Company and shipped to him at Liverpool. . . . Even if we were authorized to presume that such canvas was manufactured into belting and sold or used in England, there is not a particle of testimony tending to show that it was publicly used or put on sale in this country. Conceding that there was sufficient evidence of the use of such a belting in England, we think that this does not vitiate the patent." *Gandy v. Main Belting Co.*, 143 U. S. at 592.

“His recognition of the advantages of plaintiff’s patent process over his own is shown by the fact that he adopted the Perkins method . . . and discarded his own.” *Perkins Oil Well Cementing Co. v. Owen*, 293 Fed. at 458.

“A cursory examination of standard works shows that at most Werk’s use of horse hair mats . . . was but a revival. . . . Practices of which the court takes judicial notice. . . . The references quoted were not given in evidence . . . we will defer mandate . . . to determine . . . a motion for reargument.” *Werk v. Parker*, 231 Fed. at 124, 125.

“Louis Royer did not continue the work upon his process, and it was to some extent abandoned, it is very questionable whether he had not before that completed the invention, . . . and whether he did not abandon the work from some other cause. There are many circumstances which may prevent a man from going on and making a discovery, which he has made, available and profitable.” *Royer v. Chicago, Mfg. Co.*, 20 Fed. at 855.

“Was not an abandoned experiment. They knew the product they wanted to get. . . . They used it in successful manufacture. . . . Whenever they have been called upon . . . to explain the process, they have done so. The use was not secret . . . was open to the observation of the employees generally, and of all who passed through the plant.” *United States Mineral Wool Co. v. Manville Covering Co.*, 125 Fed. at 772.

“It is said the present interference relates to a process, whereas the others relate to an apparatus, and it is urged that to use in one case testimony taken in the other would cause confusion. . . . The process defined in the present case cannot be performed without using an apparatus. . . . It may be that the testimony . . . contains unnecessary matter, but it is not to be ruled out on that ground alone.” *Struble v. Young*, 119 O. G. 338.

“ ‘The very fact’ of the grant of a patent for the process described ‘is some evidence of its operativeness, as well of its utility,’ when introduced by way of anticipation. . . . Standing unimpeached each of the patents in evidence is entitled to consideration, with its value dependent alone upon the identity and completeness of the means and results described.” *National Chemical and F. Co. v. Swift and Co.*, 104 Fed. at 91, 92.

### **VII. Of Some Presumptions and Estoppels Peculiar to Chemical Patents**

“The process employed is not protected by patent, as the application for that object was rejected by the patent office, but the patentee is, nevertheless, entitled to the broader protection of his product for which the patent was finally allowed, if it be true that it is his discovery in the sense of the patent law, provided the means and method of production are clearly set forth.” *National Chemical and F. Co. v. Swift and Co.*, 104 Fed. at 89.

“This suit has been brought against John H. Scharling, the inventor of the process, and assignor of the letters patent. . . . The defendant must not be permitted to stultify himself, by asserting that the simple act of ‘turning’ the article slowly, while it received its baptism of silver solution, was the process he invented. This evidence . . . tending to deny the validity of the patented process . . . cannot be received or considered in this suit.” *Alvin Mfg. Co. v. Scharling*, 100 Fed. at 90, 91.

“The patent . . . held void in the former suit, is for an apparatus . . . while the patent in suit is for a method of heating by using the same apparatus. . . . Because the essential fact at issue in the present case is the same as that which was decided in appellee’s favor in a previous case, the conclusion follows that the question is

res adjudicata. In that case it was claimed that the apparatus introduced a new mode of operation, namely, a method known as the vapor system, but the court held the vapor system was old in the art, so that the method of operation characteristic of the apparatus was old also." *Vapor Car Heating Co. v. Gold Car Heating and L. Co.*, 7 Fed. (2) at 286, 287.

"The case is now for decision on Denulso Corporation's petition to leave to intervene. . . . Petitioner merely sells a product used in a process, . . . the infringement consists in the practicing of the process. . . . Denied." *Tretolite Co. v. Darby Petroleum Co.*, 20 U. S. P. Q. 165, 166.

"Method claim 1 and cancelled claim 3 . . . are not substantially the same. . . . Claim 1 is for a process. The rejected claim was for a mechanical combination. It is true that the combination described in the rejected claim seems to be described in claim 1. But that fact does not lead to its rejection. . . . The method claims of the patent in suit . . . the rejection of the original third claim does not necessitate a construction so limited as to annul them." *Bullock Electric Mfg. Co. v. Crocker-Wheeler Co.*, 141 Fed. at 110.

"An interference was declared between claims 2 and 3 of the appellant's patent and claims identical therewith which had been adapted by Charles in his application for a reissue patent. Thereafter the appellant filed his disclaimer, and moved that the interference be reformed in accordance therewith. . . . The right of disclaimer is remedial, and is entitled to a liberality of treatment, so long as the claim is not mutilated. . . . No injury to defendants, or any one else, is shown." *Carson v. American Smelting and R. Co.*, 4 Fed. (2) at 469, 470.

"While the application for the patent in suit was pending in the patent office, a subsequent application for another patent showed a separator which acted on the principles outlined in the last paragraph above. . . . To this second application were appended the claims. . . . On

the suggestion of the patent office, said claims were also appended to the patent in suit; and afterwards upon interference proceedings, they were awarded to Houston and Thomson, as being covered by the invention of the patent in suit. . . . With this action of the patent office we are not in accord. The skim milk could not be removed from the Houston and Thomson vessel, *A*, by centrifugal force. . . . The pump is necessary. . . . Their monopoly is limited by the process . . . as disclosed in their patent." *Philadelphia Creamery S. Co. v. Davis and Rankin Bldg. and Mfg. Co.*, 84 Fed. at 884, 885.

"There are in the first patent 16 separate claims. . . . When such a patent comes before a court in a suit against some particular infringer, and it is found that one valid claim is sufficient to cover the particular infringement, and all possible variations of it accomplished by colorable modifications, it is not always necessary to discuss other claims of the patent." *Parke-Davis and Co. v. H. K. Mulford and Co.*, 196 Fed. at 498, 499.

### **VIII. Of Patent Accounting Peculiar to Chemical Patents**

"The defendant had a certain quantity of hematine paste. Some of it sold as paste. Some of it he treated in the nonpatented way, selling it as one of the old dry powders. Some of it he treated as the patent directed, and sold the proceeds as the nonhygroscopic powder. . . . Why, under those circumstances, he should not account for the profits he made in selling paste transformed into nonhygroscopic powder by the patented process, we fail to see." *Hemolin Co. v. Harway Dyewood and E. Mfg. Co.*, 166 Fed. at 436.

"The expense of using the new process is doubtless to be ascertained by the manner in which the defendants have in fact conducted their business, and not by the manner in which they might have conducted it. But as to the comparative expense of the old process, the cost



at which they used that process, if they did once use it, although strong evidence against them . . . is not conclusive. . . . The result is arrived at by taking the amount of savings in chemicals . . . adding the amount gained in glycerine water." *Tilghman v. Proctor*, 125 U. S. at 151, 160.

"The method which is taken for comparison in any such case must not only be open to the public but also must be capable of equally satisfactory results. . . . The superiority of product, as shown by the price obtained, is equally a measure of the advantage . . . to which extent, in any event they must account." *Pressed Prism Glass Co. v. Continuous Glass Prism Co.*, 181 Fed. at 154, 155.

"He refused to allow the profits due to elements not patented, which entered into the composition of the patented articles. There may be cases in which such an allowance would be proper." *Providence Rubber Co. v. Goodyear*, 9 Wall. at 803.

"Under the process patent No. 319,795 the Messrs. Cowles . . . had a right . . . to manufacture carborundum, and . . . until the Acheson patent was obtained . . . to use and sell any carborundum made by them. . . . Whether the defendant did or did not hold a valid patent for carborundum as a product is . . . immaterial . . . for profits having been rendered possible only through the infringement of patent No. 319,795 the whole amount . . . must be awarded to the complainant." *Carborundum Co. v. Electric Smelting and A. Co.*, 203 Fed. at 984, 985.

"The complainants in this case seek to recover the gains, advantages and profits resulting to the defendant, Roberts and Schaefer Company, from their infringement by manufacturing and selling, and in addition the gains, profits and advantages resulting to the Gulf Smokeless Coal Company and other vendees of Roberts and Schaefer Company from their infringement upon complainants'

patent rights through use of the infringing tables. Undoubtedly the complainants are entitled to recover the profits shown to have resulted from the infringement by manufacture and sale and, in addition thereto, profits shown to have resulted from infringement by use. The right to the use of the patented process is as much the exclusive property of complainants as is the right to manufacture and sell. But if the complainants should receive and accept a recovery by way of general damages for the sale of a specific table such acceptance would operate to adopt the sale of that table as a sale by complainants themselves and, therefore, preclude any recovery for its use." *American Coal Cleaning Corp. v. Gulf Smokeless Coal Co.*, 19 U. S. P. Q. 171.

"The production of stainless steel is the essential and all-important disclosure in their process of manufacturing the patented articles covered in their patent claims. . . . To deny the recovery of profits derived from the making of the steel prepared in accordance with their instructions . . . would be to deprive the plaintiff of the principal value of the inventions covered by the patents in suit." *American Stainless Steel Co. v. Ludlum Steel Co.*, 16 Fed. (2) 825.

"Other known (noninfringing) means and processes for making wire glass . . . were incapable of producing in commercial quantities the larger sizes of wire glass required by the trade and made by the defendant. . . . Liability for the entire net profits . . . we believe to be settled." *Western Glass Co. v. Schmertz Wire Glass Co.*, 226 Fed. at 733, 734.

"Processes which were developed after the infringement as a substitute for use by the defendants cannot be used as a standard of comparison. This record discloses no process that might be used as a standard of comparison. The rule is therefore applicable which requires the defendants to pay over to the plaintiff all the profits which they derived through unlawful infringement."

Philadelphia R. Wks. Co. v. United States Rubber R. Wks., 277 Fed. at 177.

"The master was directed to state an account, not only of the profits of the sale of the product described in claim 2, but also of the profits from the use of the processes . . . within the protection of the several process claims. . . . To restrict the accounting, therefore to the sale of 'Hydrolene B' is in effect to ignore altogether the process claims. . . . It must account for all profits received." Byerly v. Sun Co., 226 Fed. at 762, 763, 764.

"If a part was waste . . . the cost of producing waste was an ingredient in the cost of producing the resultant finished product." Continuous Glass Press Co. v. Schmertz Wire Glass Co., 219 Fed. at 203.

"What advantage did the defendant derive from using the complainant's invention over what he had in using other processes then open to the public and adequate to enable him to obtain an equally beneficial result? The fruits of that advantage are his profits. . . . What was the advantage in cost, in skill required, in convenience of operation, or marketability, in bringing car-wheels by Whitney's process from the condition in which they are taken hot from the molds, to a perfected state, over bringing them to the same state by those other processes, and thus rendering them equally fit for the same service? That advantage is the measure of profits." Mowry v. Whitney, 14 Wall. at 651.

"Prior to the date of the invention there was but one method of bleaching nuts, and that was the sulphur process; . . . there are certain classes of nuts which this process will not bleach at all . . . the proportion of such nuts is at least 10 per cent. of the total crop . . . the patented process will successfully treat them, and convert them into first class nuts . . . if they are treated by the sulphur process they will be classed as culls . . . the difference between what they actually brought as first-class nuts and what they would have brought if they had

been sold as culls constituted the savings or profits." *Fullerton W. G. Assn. v. Anderson-Barngrover Mfg. Co.*, 166 Fed. at 453.

"If the articles had been manufactured under a license to use the patented process, the royalty provided therein would have been a factor of cost to the licensee in the production of articles under the patent, and profits made thereon would be only so much as remained after paying the royalty. . . . As the articles here were produced not under license but by infringement of the patent, a like royalty is chargeable in the same way as a factor of cost in order to ascertain what profits were made by the infringement." *McKee Glass Co. v. H. C. Fry Glass Co.*, 248 Fed. at 129.

"Defendant . . . was properly held liable for the profits derived from the manufacture and sale of that article, notwithstanding it might have made and sold the cotton, boracic acid, and glycerine, which are the ingredients of borated cotton, if it had chosen to do so, and at the same or even a larger profit." *Am Ende v. Seabury*, 43 Fed. at 672.

"Its butter making and cream business was separable from the powdered milk business, in which the infringing Stauff process alone was used . . . it could have purchased skim milk. . . . There was a loss from the cream and butter sales. . . . The recovery by plaintiff of the profits of the powdered milk business is approved." *Merrell-Soule Co. v. Powdered Milk Co. of America*, 2 Fed. (2) at 107, 108.

"Any profit gained by a defendant from the use of what was old prior to the date of the patent infringed cannot constitute any part of the compensation to be awarded to the patentee. . . . The market value of the addition made by the defendant to the old tire is easy of ascertainment. Both kinds of tires were manufactured and sold by defendant side by side. The concurrent operations thus furnish a basis of ascertainment." *Metallic*



Rubber Tire Co. v. Hartford Rubber W. Co., 275 Fed. at 322, 323.

"Plaintiff made and makes its powdered milk, not only under Stauf's patent, but by using a process of precondensation before applying the Stauf method, and . . . the economical and profitable conduct of plaintiff's business as proven depends to some extent upon this precondensing method. . . . The question then is, what would a reasonable man, who wished to go into this business in the hope of procuring a reasonable profit be willing to pay for the use of a necessary process, which however was only a part of the whole process of making powdered milk?" *Merrell Soule Co. v. Powdered Milk Co. of America*, 7 Fed. (2) at 300.

"When the entire profit of a business or undertaking results from the use of the invention, the patentee will be entitled to recover the entire profits, if he elects that remedy." *City of Elizabeth v. American Nicholson Pav. Co.*, 97 U. S. at 139.

"When, however, the invention relates to a new composition of matter, and the infringing article is made of the patented material, and this alone, the measure of the patentee's damages may be the entire profit which he would have made. There is no room for segregation." *Welling v. LaBau*, 34 Fed. at 43.

"Here the defendants saved a considerable quantity of flour by the use of the complainants' property, which, until they used it, had been lost. Their gain is directly traceable to the use of the invention." *Herring v. Gage*, 3 Ban. and A. 396.

"For the value of this economical advantage, then, the respondents are accountable; and, the appropriate measure of it, is, the difference in the cost of obtaining the same product by means of the new process, and of the old one which it superceded. . . . Without a furnace of special aptitudes, the process in question cannot be successfully or profitably practiced. . . . The complainants did



not supply this indispensable co-efficient. . . . The furnace indispensably contributed to the result. . . . Upon this basis, but one-half of the gains . . . is due to the complainants' patent, and for that proportion only, are the respondents to be adjudged liable." *Wetherill v. New Jersey Zinc Co.*, 1 Ban. and A. 485.

"The master should have compared the result of the complainants' process with the results obtained prior to the invention. . . . The essence of the complainants' invention consists in the thorough crushing of the seed, without grinding it . . . and that is what the defendants did after the service of the injunction. . . . The manner in which the small mullers . . . were used, had little, if any, appreciable effect. They certainly did not grind. . . . It was error to adopt this test of comparison." *Lawther v. Hamilton*, 64 Fed. at 224.

"The master found that the process covered by the Barnickel patent . . . was the only known process by which the roily oils treated . . . could be broken up. . . Appellant attacks this finding and contends . . . that the master and trial court should have used the hot water process as a standard of comparison in determining the profits realized." *Producers' and Refiners' Corp. v. Lehmann*, 18 Fed. (2) 496.

"It is urged that the patented Thompson machine should have been used as a proper standard of comparison. This machine was not available on the market until 1933 . . . , it was proper to reject it." *National Carbon Co. v. Richards and Co.*, 30 U. S. P. Q. 330.

"Both systems were functional processes . . . each hour of use of the carbon was a separate infringement." *National Carbon Co. v. Richards and Co.*, 30 U. S. P. Q. 329.

"A process yet in the experimental stage, and developed for the purpose only of avoiding infringement, made at or after the appropriation by the infringer of the other's process, and covered by a patent to itself—that

is, used experimentally and occasionally only during the infringing period, or only under compulsion of an injunction, and abandoned as soon as the infringer is at liberty to change back—does not make a case of another existing process, or means, open to the public and to the defendant, or constitute a basis of comparison in determining the gains and advantages from the use of the infringing process over other processes.” *Expanded Metal Co. v. General Fireproofing Co.*, 247 Fed. at 910.

“No suggestion has yet been made that any competitor desires to or successfully can, manufacture the device of the product patent except by the patented method. Whether competitors infringe one or both of these two patents does not seem to be of any practical importance. . . . The royalty . . . would necessarily cover the product patent . . . one royalty upon the use of machine or method seems appropriate compensation.” *Reo Motor Car Co. v. Gear Grinding Mach. Co.*, 42 Fed. (2) 970.

### **IX. Of Sundry Bars in Patent Litigation**

“That the use of the pavement in question was public in one sense cannot be disputed. But can it be said that the invention was in public use? The use of an invention by an inventor himself, or of any other person under his direction, by way of experiment, and in order to bring the invention to perfection, has never been regarded as such a use. . . . Now, the nature of a street pavement is such that it cannot be experimented upon satisfactorily except upon a highway, which is always public. . . . Any attempt to use it for profit, and not by way of experiment, for a longer period than two years before the application would deprive the inventor of his right to a patent.” *City of Elizabeth v. American Nicholson Pav. Co.*, 97 U. S. at 134, 137.

“The complainants have not complied with section 4900 Rev. St., which requires that articles manufactured

under a patent shall be so marked. But . . . this requirement is inapplicable to the case of a process." *United States Mitis Co. v. Midvale Steel Co.*, 135 Fed. at 112. See also *Wine Ry. Appliance Co. v. Enterprise Ry. Equipment Co.*, 297 U. S. 387.

"The defendants used the invention of Harly for four months before his application for a patent . . . with his express consent and allowance. . . . The Act of 1839 . . . is in these words: 'That every person who has, or shall have purchased or construed any newly invented machine . . . prior to the application by the inventor or discoverer of a patent, shall be held to possess the right to use and vend to others to be used, the specific machine.' . . . Plaintiffs counsel have contended, that this act cannot apply . . . and does not extend to such use . . . if it does not consist of a machine . . . we think that the law does not admit of such construction. . . . The words . . . mean 'the invention patented.' " *McClurg v. Kingsland*, 1 How. at 208, 209, 210.

## **X. Of Secret Processes**

"The true rule seems to be that a party need not give a discovery, the effect of which will be to unnecessarily disclose a trade secret. It would seem that there is no real escape from the necessity of disclosing this process by defendants in the case at bar in order to make possible a correct determination of the issues." *John Wood Mfg. Co. v. Keiner-Williams Stamping Co.*, 4 Fed. (2) at 616.

"The defendant is not excused from giving negative testimony by reason of its desire to keep its process a business secret, for in such case, as said by Judge Lacombe in *Badische Aniline and Soda Fabrik v. A. Klipstein and Co. et al.*, 125 Fed. 543: A court might not compel them to divulge it, but they could at least show by affirmative proof that some one or more steps (or all the

steps) of the process set forth in the patent had not been followed in the manufacture of the product." *Philadelphia Rubber W. Co. v. United States Rubber R. Wks.*, 225 Fed. at 794.

"While plaintiff must demonstrate infringement, similarity of result may justify a conclusion of infringement, in the absence of proof that in some respects the secret process (which need not, however, be disclosed) or the resulting product differs from the patented process or product. . . . Here, however, the affidavits . . . while guarding the secret process purport to show important differences. . . . They raise at least a reasonable doubt as to infringement." *A. B. Dick Co. v. Barnett*, 277 Fed. at 424.

"Complainants . . . now move the court to order that the defendants do permit a full and thorough inspection. . . . The defendants . . . deny infringement, and furthermore assert, under oath, that rasps have been manufactured by them, by a peculiar process, not patented, but kept as a secret in their business, since 1836; and they produce files and rasps . . . made many years before the letters patent in question were issued, and which . . . seem to be entirely similar to those now made by the complainants. . . . The motion . . . for a 'fishing excursion' . . . is . . . denied." *Stokes Bros. Mfg. Co. v. Heller*, 56 Fed. at 298.

"It is quite true that this affidavit of Brewer's is somewhat disingenuous in its refusal to disclose the precise character of the compound he uses for the defendant, and the exact processes. . . . The defendant is under no obligation to aid the plaintiffs in the procurement of their proof." *Societe Anomyne du Filtre, etc. v. Allen*, 90 Fed. at 817.

"The appellant company . . . commenced to use the formula and process 'as secret inventions for making illuminating glass.' . . . The products of the formula and process were 'put upon the market and sold in this coun-

try in large quantities as regular articles of trade and commerce.' . . . The question is whether one who has discovered and perfected an invention can employ it secretly more than nine years for purposes only of profit, and then, upon encountering difficulty in preserving his secret, rightfully secure a patent. . . . We . . . conclude . . . the invention had been abandoned." *Macbeth-Evans Glass Co. v. General Electric Co.*, 246 Fed. at 696, 697, 707.

"By May, 1865, he was so satisfied of the value of his process of filtering in respect to West Virginia oil, that he applied for his patent . . . Deforest [alleged to anticipate] . . . filtered . . . in this way from seventy-five to one hundred barrels of petroleum and sold them . . . in June, and perhaps July, 1862. . . . But the oil carried with it no evidence as to how it was refined. . . . The patent is . . . valid. "*National Filtering Oil Co. v. Arctic Oil Co.*, 4 Fish. 514.

"The general manager of Cambria Iron Company, a corporation, not a party to the suit, was duly served . . . directing him to produce . . . certain drawings and templates. . . . Refused to produce them . . . to prevent the disclosure of valuable business secret of said Cambria Iron Company . . . related to a method of manufacturing a rail. . . . The defendant is entitled to the production of such drawings." *Johnson Steel Street Rail Co. v. North Branch Steel Co.*, 48 Fed. at 191, 193, 194.

"Visitors were admitted to the Smith Company plant only by permission of certain high officials who personally conducted those admitted through the plant. . . . The policy of secrecy in the manner above described was a general policy of the Smith Company." *Stresau v. Ipsen*, 25 U. S. P. Q. 479.

"The determinative facts of this case are . . . the opportunity of the plaintiff, voluntarily afforded by the defendant, now to make a full and complete examination of defendant's plant, processes, and apparatus. . . . The



plaintiff will be ordered to file a bill of particulars setting out the steps in the processes of the defendant that the plaintiff will rely upon at the trial to establish infringement by the defendant of the process claims in suit, and also setting out the parts or elements of defendant's apparatus that the plaintiff will rely upon. . . . A paralleling of the steps of defendant's processes and the elements of its apparatus with each step and element of the claims in suit . . . should not be required." *Universal Oil Products Co. v. Skelly Oil Co.*, 12 Fed. (2) at 274, 275.

"It is not a valid objection to argue that the interrogatories do not cover all the elements of the patented processes. . . . In the end, the right of the plaintiff to bring out the truth must prevail. . . . It is true that the result may be to compel the defendant to disclose how far it goes in the process, though it does not use the process as a whole, and that may damage the defendant. . . . Unless the defendant may be made to answer, the plaintiff is deprived of its right to learn whether the defendant has done it a wrong." *Grasselli Chemical Co. v. National Aniline and C. Co.*, 282 Fed. at 381.

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## LEGAL AND INDUSTRIAL TERMS USED IN THIS BOOK

**Aberration.**—Converging to several foci.

**Accelerator.**—A compound for inducing the vulcanizing of rubber by sulphur.

**Acetates.**—Compounds obtained by the action of acetic acid.

**Acetone.**—A volatile mobile liquid, or other compound of the same class, having two alcoholic radials united by the group CO.

**Acetylene torch.**—A blow pipe burning acetylene.

**Acid.**—Combining with bases.

**Acid arsenate of lead.**—An arsenate of lead including available arsenic acid.

**Acid bath.**—A bath containing free acid.

**Acid phosphate.**—A phosphate containing hydrogen which is replaceable by a metal.

**Active.**—Said of the lead compounds effective in a storage battery.

**Adamite.**—A trade name of a special iron alloy.

**Aerobic.**—Able to live in presence or absence of oxygen.

**Albumen.**—A protein, white of egg being a pure form.

**Albumenoids.**—Albumen-like substances.

**Alcohol.**—A hydrocarbon in which one H has been replaced by OH, or the specific substance ethyl alcohol.

**Aldehyde.**—The name of a class of organic compounds intermediate between alcohols and acids.

**Alizarine.**—A dyestuff found in madder, now made artificially.

**Alkali.**—An alkaline substance, usually carbonate of soda.

**Alkaline.**—Having the properties of an alkali, adapted to neutralize an acid.

**Alkaline-earth metals.**—Calcium, barium, and strontium.

**Alum.**—Sulphate of alumina crystallized with another sulphate.

**Alumina.**—The oxide of aluminum.

**Alumina hydrate.**—Hydroxide of alumina which is a constituent of many clays.

**Aluminum chloride.**—The compound of aluminum with chlorine used in oil refining.

**Aluminum nitrid.**—The compound of aluminum with nitrogen.

**Aluminum oxide.**—Alumina, the compound of aluminum with oxygen.

**Aluminum silicate.**—The compound of aluminum with silicic acid, a constituent of many clays.

**Alloy.**—A compound of metals fused together.

**Alternating current.**—An electric current going alternately in opposite directions.

**Amber.**—A yellow fossil gum.

**Ammonium phosphate.**—The compound of ammonia with phosphoric acid.

**Amyl oil.**—Fusel oil, or amyl acetate.



- Anaerobic.**—Able to live without free oxygen.
- Aniline-black.**—A black dye made from aniline.
- Anhydrous.**—Free from water in any form.
- Annealing.**—Heating followed by slow cooling to toughen.
- Annular.**—In the form of a ring.
- Antimony.**—A white brittle metal often alloyed with lead to harden the lead.
- Arc furnace.**—A furnace in which the heat comes from an electric arc.
- Arc welding.**—Electric welding by the arc process.
- Arsenate of copper.**—The compound of copper with arsenic acid.
- Arsenate of lead.**—The compound of lead with arsenic acid.
- Arsenic acid.**—A compound of arsenic with oxygen and hydrogen.
- Arsenite of copper.**—The compound of copper with arsenious acid.
- Asphaltic oil.**—A petroleum having an asphalt base.
- Aspirin.**—A compound of phenol and salicylic acid used in medicine.
- Astrakhan cloth.**—An imitation of the fur of that name.
- Azo.**—Containing nitrogen atoms directly combined.
- Bacteria.**—Microscopic vegetable organisms.
- Bait.**—A part by which to catch molten glass to draw it.
- Baryta.**—Oxide of barium.
- Base.**—A foundation material.
- Base.**—A substance adapted to unite with an acid.
- Basic color.**—Dyeing cotton upon an acid mordant.
- Bauxite.**—A native alumina like a clay.
- Benzine.**—A heavy gasoline.
- Benzol.**—The hydrocarbon benzene  $C_6H_6$ .
- Beta.**—A prefix used to distinguish a certain class of atomic groupings in organic compounds.
- Bicarbonate of soda.**—Cooking soda.
- Bichromate of potash.**—The potassium compound with chromium and oxygen much used in dyeing.
- Bisulphide of carbon.**—Disulphide of carbon, a heavy malodorous volatile liquid.
- Bitumen.**—A hydrocarbon, usually a solid but plastic one.
- Bitumenous rock.**—A rock containing asphalt.
- Blank.**—A piece of metal or other material prepared for further working.
- Boiled linseed oil.**—Linseed oil which has been heated enough to accelerate its drying.
- Bone phosphate.**—Fertilizer phosphate made by treating bones with acid.
- Borate.**—A compound formed by boric acid.
- Boric acid or boracic acid.**—The acid formed from boron, borax being a complex borate.
- Bran.**—The broken coat of grain.
- Brandon red.**—A native pigment.
- Brazing.**—Uniting by molten brass instead of solder.

**Bromide paper.**—Photographic printing paper made with silver bromide, making it very rapid.

**Bromine.**—A heavy brownish liquid element, very corrosive.

**Bronze.**—A specific metal alloy, or metal in the form of powder suitable for bronzing.

**Burnish.**—To rub, especially in polishing.

**Burr.**—A projecting sliver of metal.

**Butt-weld.**—Parts welded edge to edge, not overlapping.

**Cadmium.**—A soft metal somewhat like tin.

**Calcined plaster.**—The trade name of plaster of Paris.

**Calcium.**—The metal whose oxide is lime.

**Calcium carbide.**—The compound of calcium and carbon which when wet yields acetylene.

**Calcium carbonate.**—Lime, marble or native chalk.

**Capillary.**—Like a fine tube.

**Carbid.**—The compound of a metal with carbon.

**Carbohydrate.**—Starch or sugar.

**Carbolic acid.**—An old name for phenol.

**Carbon monoxide.**—A poisonous gas.

**Carbonate of soda.**—Washing soda which has been calcined or made water-free.

**Carborundum.**—The very hard silicon carbide.

**Casing.**—Lining an oil well with iron pipe.

**Cassava.**—A starch-producing plant resembling a sweet potato.

**Catalytic.**—A reaction brought about by a catalyst which is recovered unchanged after the reaction.

**Catalyzer.**—A catalyst which induces reactions between other substances without being itself consumed.

**Caustic alkali.**—The oxide or hydroxide of an alkali metal.

**Celluloid.**—A plastic composition made from camphor and gum cotton.

**Cerium.**—A metal found with the rare earths.

**Chancellor.**—A judge sitting in a court of equity as distinguished from a law court.

**Chemical resins.**—Artificial substitutes for natural resins.

**Chickly.**—An old name for gum chicle used in chewing gum.

**Chloride.**—A compound containing chlorine.

**Chloride of calcium.**—The compound of calcium and chlorine used to absorb moisture.

**Chlorinated.**—Having taken up chlorine.

**Chlorine.**—A gaseous corrosive element.

**Chloroform.**—A colorless liquid, trichlormethane.

**Chromium.**—A metal largely used to alloy with iron or as part of the compound potassium bichromate.

**Claim.**—See Chapters, 2, 11, 12.

**Coagulant.**—A material which causes coagulation.

**Coal tar.**—The tar obtained by heating coal.

**Cobalt.**—A grey metal resembling nickel but mainly used in alloys.

**Coconut oil.**—The oil expressed from coconut meats.

**Coefficient of expansion.**—The numerical value measuring expansion due to heat.

**Coffer dam.**—A temporary embankment to exclude water from excavations.

**Collar paper.**—Paper used in making collars.

**Colloid.**—Glue-like, also applied to uncrystallizable substances or to suspensions of fine material.

**Colloidal.**—In the form of a colloid.

**Concentrating.**—Treating an ore to separate much of the gangue from the values.

**Condensation product.**—A term used in organic chemistry to describe compounds which are the product of the union of two molecules of other substances.

**Condenser.**—In electricity a device capable of holding a small quantity of electricity.

**Contributory infringement.**—See Chapter 13.

**Converter.**—In electricity a device for changing the type of an electric current.

**Converter.**—In metallurgy a large container for molten metal provided with means for blowing air through the metal.

**Converting.**—Changing copper matte to metallic copper, or iron to soft steel.

**Converting agent.**—A substance used to cause gun cotton and camphor to unite.

**Core.**—Used in metal founding to make hollow articles.

**Corn oil.**—Oil obtained from the germ of Indian corn.

**Count.**—See Chapter 20.

**Cryolite.**—A mineral composed of fluorine, sodium and aluminum, which melts in the flame of a candle.

**Crystalline.**—In crystal form.

**Cyaniding.**—Treating with a cyanide, usually to recover a metal.

**Cyclic  $\text{CH}_2$  hydrocarbon.**—A type of hydrocarbon found largely in California and Russian petroleum.

**Cylinder of glass.**—The first step in forming window glass.

**Dag.**—A colloidal suspension, usually of graphite.

**Degenerated.**—Partly broken down.

**Detector.**—A device for rendering available the oscillations of Hertzian waves.

**Detergent.**—A cleansing material.

**Diazotize.**—To change to a diazo compound.

**Die.**—A hard metal device to form or shape material.

**Digester.**—An enormous kettle in which paper pulp is formed from wood.

**Digestion.**—Soaking with.

**Di-nitroglycerine.**—The nitroglycerine intermediate between the mono and the tri-nitrate.

**Disclaimer.**—See Chapter 17.

**Dissolved bone.**—Bon treated with acid to dissolve it.

**Dithiocarbamic acid.**—A salt of a sulphur and nitrogen—containing organic acid.

**Dolomite.**—A native carbonate of magnesia.

**Dope.**—A liquid used for treating or varnishing materials.

**D. P. G.**—Diphenylguanidine, a complex rubber accelerator.

**Double patenting.**—See Chapter 18.

**Double sulphate.**—A crystallizable combination of two sulphates.

**Dyewood extracts.**—The extracts of wood used for dyeing.

**Electro-deposition.**—Electro-plating.

**Electrode.**—An electric terminal, often one immersed in a liquid.

**Electrolytic.**—By electrolysis, viz., passing an electric current through a solution.

**Electronic.**—In the form of electrons, smaller than atomic.

**Elemi.**—A natural gum.

**Emanations.**—A substance issuing as a gas or in atomic form.

**Empirical.**—Based only on observation.

**Essential oils.**—Originally the name of volatile oils of plants, now used to describe similar substances.

**Ester.**—An organic compound of an alcohol radical with an acid radical.

**Estoppel.**—A rule of law prohibiting a party from asserting something inconsistent with his past statements or conduct.

**Etched.**—Marked by acid.

**Ethers.**—Organic compounds, oxides of alcoholic radicals.

**Equity.**—The system of jurisprudence or body of doctrines and rules as to what is equitable, developed from the practice of the English Court of Chancery and distinct from common law.

**Expert.**—See Chapter 21.

**Fact.**—Question of, a question answered only by evidence.

**Fat liquor.**—A mixture used by tanners.

**Fatty acids.**—Fat acid, the organic acids combined with glycerine which make up soap fats.

**Ferric.**—Iron-bearing.

**Ferrous.**—Iron-bearing so that the iron is combined with less of another element than if ferric.

**Ferrule.**—A band encircling a rod to prevent splitting.

**Fettling.**—Covering the hearth of a furnace.

**Finishing.**—The technical name for the steps of dyeing, singeing, bleaching, etc., to render textiles more saleable.

**Fixed oil.**—A fatty acid combined with glycerine as in soap fats.

**Flat characteristic.**—Describing a dynamo which delivers a relatively unchanged type of current under varying conditions.

**Fluoride.**—A compound containing fluorine.

**Flux.**—Material adapted to form a protective slag.

**Formaldehyde.**—Formic aldehyde, a pungent gas, usually kept in solution. The simplest aldehyde.

**Founder.**—One who operates a foundry.

**Free fatty acid.**—Fatty acid not forming part of another compound.

**Frequencies.**—Rates of alternation of electric current.

**Froth.**—A substantial group of bubbles floating on the surface of a liquid.

**Fuchsine.**—A reddish aniline dye.

**Fulling.**—To render plump, to shrink woolens.

**Fume.**—The condensate from volatilized metal or the fumes of the volatilized metal.

**Functional.**—See Chapters 5 and 11.

**Fusel oil.**—The less volatile oils and alcohols separated in rectifying grain alcohol.

**Gasket.**—A ring or washer.

**Galvanic.**—Electric.

**Gel.**—A solid or semi-solid colloidal solution, as set gelatin.

**Generator.**—In electricity a dynamo.

**Glukodine.**—A trade name for an explosive.

**Glue base.**—A material from which a glue-like material may be made.

**Glycerine.**—The syrup-like compound which united with fatty acids forms oils and fats.

**Glycerine water.**—The waste water in soap-making from which glycerine is recovered.

**Gob.**—A large drop.

**Gold-ruby.**—A color in glass obtained by the use of gold.

**Green stage.**—An early stage of finishing certain textiles.

**Ground plaster.**—Ground gypsum.

**Guncotton.**—Cotton which has been converted into nitrocellulose by nitric acid.

**Gutta percha.**—A gum closely allied to india rubber but plastic rather than elastic.

**Gypsum.**—A native sulphate of calcium.

**Halloysite.**—A clay much like kaolin.

**Halohydrin.**—An organic hydrin containing a halogen, usually chlorine.

**Halvah.**—A Turkish sweet meat originally made up of sugar and sesame oil.

**Hematine.**—The oxidized active coloring matter of logwood.

**Hexa.**—Abbreviation for hexamethylenetetramine a widely used organic compound.

**Homologue.**—What has the same relative structure.

**Hydrocarbon.**—Containing only carbon and hydrogen.

**Hydrocyanic acid.**—The highly poisonous prussic acid.

**Hydrolene.**—Trade name of an artificial asphalt.

**Hydrolysis.**—Splitting into two substances by the action of water.

**Hygroscopic.**—Hydrosopic, attracting water.

**Incandescing.**—Heating to incandescence.

**Indigo.**—A natural dyestuff now made synthetically.



**Infringement.**—See Chapters 13, 14 and 15.

**Infusorial earth.**—Naturally occurring silicious skeletons of almost microscopic life.

**Ingot.**—A cast bar ready for rolling.

**Inlay.**—A dental filling prepared to fit a cavity.

**Ionization.**—Forming ions.

**Inorganic.**—The chemistry of compounds other than those that are carbon-bearing.

**Interference.**—See Chapter 20.

**Japan.**—A baking varnish.

**Kaolin.**—A very pure silicate of alumina clay.

**Kendymag.**—Trade name for a treated magnesite.

**Kerite.**—A trade name for a treated oil or asphalt.

**Ketone.**—An organic compound in which two alcohol radicals are joined to a CO.

**Kiln.**—A structure for “burning” lime, or one for drying wood, etc.

**Kjeldahl method.**—A method of ascertaining the amount of nitrogen present in a substance.

**Lamellar.**—Composed of plates or scales.

**Lap weld.**—Welding overlapping parts.

**Last.**—A form on which shoes are built.

**Latent solvent.**—Normally inactive solvent.

**Law.**—Question of, is one not alterable by facts given in evidence.

**Lay.**—Turns of strands in a rope.

**Leach.**—To extract with a liquid usually water.

**Leucite.**—A natural silicate of aluminum and potassium.

**Lime-putty.**—Lime slaked with enough water to have the consistency of putty.

**Magdolite.**—A trade name for treated magnesite.

**Magnesite.**—A natural carbonate of magnesia.

**Magnesium.**—A silver-white metal.

**Magnetite.**—Magnetic oxide of iron.

**Mandrel.**—A temporary core of metal.

**Manganese.**—A metal used as an alloy in steel and in chemical compounds.

**Manila.**—Made from manila hemp.

**Mantel.**—The light-emitting part of a Welsbach burner.

**Manufacture.**—See Chapter 6.

**Malleable castings.**—Castings of iron treated so as not to be brittle.

**Maltha.**—An old name for some asphalts.

**Marl.**—A name of several types of mineral.

**Matte.**—A smelted mixture of metallic sulphides.

**Menstruum.**—A fluid substance used as a solvent.

**Mercerizing.**—Treating cotton with caustic alkali to give it lustre.

**Metalloid.**—An element having some but not all the properties of metals.

**Methyl.**—Containing the group  $\text{CH}_3$ .

**Mill.**—To subject to the action of power driven devices.

**Mineral acid.**—An inorganic acid, usually a strong acid.

**Mineral-frothing agent.**—A substance which enables water to form a froth to which minerals will selectively adhere.

**Mineral wool.**—An artificial mineral fibre made from slag.

**Molecule.**—The smallest possible independent grouping of matter.

**Mordant.**—A substance adapted to make a dye fast.

**Muller stone.**—Muller, a grinding stone.

**Multiple.**—Electric devices connected in parallel between terminals.

**Naphthol.**—A hydroxy derivative of naphthalene.

**Nested.**—Cups or devices fitting into each other.

**Neutralize.**—Render neither acid nor alkaline.

**Nitrate of soda.**—Chile saltpetre,  $\text{NaNO}_3$ .

**Nitrating tower.**—A tower in which percolating liquid is treated with nitric acid.

**Nitric acid.**—The corrosive acid  $\text{HNO}_3$ .

**Nitrid.**—The combination of a metal with nitrogen.

**Nitrite of soda.**— $\text{NaNO}_2$ .

**Nitrobenzole.**—A yellow oily liquid formed by the nitration of the hydrocarbon benzol.

**Nitrocellulose.**—The material, usually explosive, obtained by acting on cotton with nitric acid.

**Nitrogen peroxide.**—A higher oxide of nitrogen.

**Nitroglycerine.**—The explosive oil obtained by the action of nitric acid on glycerine.

**Nitro-saccharose.**—The explosive obtained by the action of nitric acid on sugar.

**Normal ferric phosphate.**—One neither acid nor alkaline in character.

**Occluded.**—Absorbed.

**Offsetting.**—Deposition in an undesired spot.

**Oil of wintergreen.**—Methyl salicylate, the oil of the wintergreen plant.

**Olefine.**—An unsaturated hydrocarbon.

**Organic chemistry.**—The chemistry of carbon compounds.

**Oxalate.**—A salt of oxalic acid.

**Oxalic acid.**—An organic acid found in plants.

**Oxide.**—The compound of an element or radical with oxygen.

**Oxide of silicon.**—Silica, quartz.

**Oxidizers.**—Substances which add oxygen or increase the valence of a compound or element.

- "Paint."**—A substance used in a process of producing high vacuum.
- Paper patent.**—A patent covering an invention not put to use.
- Paradichlorobenzol.**—A chlorinated benzol.
- Paraffine.**—Paraffin, paraffine wax or an oil composed of the paraffine hydrocarbons.
- Paragol.**—A factitious rubber.
- Parallel.**—Multiple, the connection of electrical devices such that a current divides itself between them.
- Patent.**—See Chapter 2.
- Pepsin.**—A digestive ferment.
- Petrocite.**—A proprietary asphalt.
- Perchloride of iron.**—An old name for ferric chloride.
- Persulphate of iron.**—An old name for ferric sulphate.
- Phenol.**—Carbolic acid.
- Phenolic condensation product.**—An artificial plastic material, bakelite.
- Phoenix metal.**—A trade name of an iron alloy.
- Phosphate.**—A salt of phosphoric acid.
- Phosphoric acid.**—An acid made by reaction of a phosphorus oxide and water.
- Phosphorus.**—One of the elements, a constituent of phosphoric acid.
- Pigment-colored.**—Colored with a pigment and not a dye.
- Pioneer patent.**—A basic patent, teaching a new art.
- Plastic composition.**—Moldable but adapted to set.
- Plug-mill.**—A device including two rolls having semi-circular opposing grooves adapted to draw a hollow billet through the grooves and over a plug which lies between the rolls in the groove so as to draw the billet into a tube whose internal diameter is determined by the plug.
- Plushing.**—Converting to a plush.
- Potash.**—The oxide or hydroxide of potassium.
- Prismatic effect.**—The partial forming of a spectrum.
- Process.**—See Chapter 5.
- Protealytic.**—Of the digestion of proteids.
- Prussian blue.**—A deep blue made from ferrocyanide of potassium.
- Pulp size.**—A size added to paper while still pulp.
- Pulverulent.**—Powdered.
- Punty.**—A glassworker's iron rod.
- Pyroarsenate.**—A salt of one of the acids of arsenic.
- Pyrophoric.**—Yielding sparks.
- Pyroxyline.**—Gun cotton.
- Rare earth metal.**—Metals contained in certain rare minerals.
- Rare earth oxide.**—The oxide of a rare earth metal.
- Reissue.**—See Chapter 17.
- Render.**—To express oil from fat by heat or pressure.
- Residuum.**—A heavy black oil remaining after lighter oils have been distilled from petroleum.
- Roily.**—The intimate bottom settling mixture of oil and water.
- Rosaniline.**—A coal tar dye.
- Rutile.**—A native titanium oxide.

**Safranine.**—A coal tar dye.

**Salt.**—A compound of a metal with an acid.

**Saponine.**—A wood extract facilitating the formation of a froth.

**Secondary circuit.**—The circuit coming from an electrical transformer.

**Sensitized gelatine.**—A photographic coating.

**Septic.**—Where poisonous bacteria flourish.

**Series.**—The connecting of electrical devices so that current flows through them in succession.

**Shellac.**—A varnish gum.

**Silicate of soda.**—Liquid glass.

**Silicon.**—The element whose oxide is silica or quartz.

**Singe.**—To burn off the fuzz of textiles.

**Size.**—To treat to render less porous.

**Slag.**—The fusible silicate used in furnace metallurgy to protect the fused metal.

**Slagging of fuel.**—Clinkering.

**Slop.**—A material at one stage of brewing.

**Soap lye.**—The alkali solution used in soap making.

**Sol.**—A liquid form of a colloid.

**Solder.**—The soft alloy of lead and tin.

**Soluble gun cotton, or Soluble cotton.**—A special nitro cellulose relatively easily dissolved.

**Specification.**—See Chapters 2 and 3.

**Speculum metal.**—An alloy formerly used largely for mirrors.

**Spirits of turpentine.**—Painters' turps.

**Spirits of wine.**—Grain or ethyl alcohol.

**Stearic acid.**—A hard white fatty acid much used in candles.

**Stearine.**—The hard part of tallow remaining after expressing oils.

**Sterin pitch.**—The black residue of the manufacture of stearic acid from fats.

**Stencil sheet.**—Mimeograph paper.

**Sulphates.**—The salts of sulphuric acid.

**Sulphide.**—The compound of a metal or a radical with sulphur.

**Sulphite liquor.**—A solution of sulphurous acid used in making paper pulp.

**Sulphonated.**—Treated with sulphuric acid to form a sulphonate.

**Sulphur process of bleaching.**—Bleaching by the fumes of burning sulphur.

**Sulphuret.**—An old name for a sulphide.

**Suprarenal gland.**—The source of adrenalin.

**Surface tension.**—The cohesion of the surface of a liquid.

**Surplusage.**—In law something unnecessary which has no legal effect.

**Swaging.**—Shaping metal forcibly with a tool.

**Synthetic.**—Artificially caused to unite.

**Taka-diastrase.**—A ferment.

**Taka-panis.**—A ferment.

**Tan.**—To convert to leather.

**Tartrate.**—A salt of tartaric acid.

**Thoria.**—The oxide of the metal thorium.

**Titanic iron.**—Iron containing titanium.

**Torpedo.**—The charge of explosive lowered into an oil well.

**Tort.**—A wrongful act, neglect or default whereby legally recognizable damage is done to another.

**Trangs.**—The metal strips at the edge of the iron table upon which plate glass is rolled. The strips support the roller which rolls out the molten glass to determine the thickness of the plate of glass.

**Transforming device.**—One altering the form of an electric current.

**Tri-nitro-glycerine.**—Nitroglycerine containing the theoretical maximum of nitrogen.

**Tumbled.**—Tumbled over and over in a closed revolving barrel.

**Tungsten.**—A hard white metal.

**Tuyere.**—Air delivery nozzle of a blast furnace.

**Twitchell process.**—A process of splitting fats by enzymes or other catalytic agents.

**Unalkylated.**—Not treated to introduce an alkyl group.

**Union.**—A plumber's joint adapted to be screwed on two pipes without turning them.

**Upset.**—To shorten and thicken metal.

**Vanadium.**—A metal used mostly as an alloy.

**Vaseline.**—The trade mark name of a jelly-like petroleum product.

**Violettan.**—An organic compound with a violet odor used in perfumes.

**Vulcanize.**—To cause sulphur to unite with rubber or analogously treat paper.

**Vulcanized fibre.**—Paper chemically treated to be nearly water-proof.

**Weft.**—Woof, the filling of a woven textile.

**Welding heat.**—Hot enough to weld.

**Worsted.**—Yarn or cloth in which wool fibres have been combed parallel.

**Wort.**—Unfermented infusion of malt.

**Xyloidine.**—A nitrostarch, or soluble guncotton.

**Yoshino.**—A very porous Japanese paper.

**Zinc dust.**—Finely divided metallic zinc.

**Zylonite.**—A form of celluloid.





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